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THE ELEMENTARY SCHOOL TEACHER

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EDUCATION OF WOMEN IN GERMANY

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One of the characteristic features of the nineteenth century was the constant progress in the education of women; and it still continues. Women are better instructed, and at the same time play a more important part in instruction. The history of education in this century will be notable for the great number of women who were educators—some real philosophers and distinguished writers, and others enthusiastic teachers.

There is no country where pedagogy has received a more philosophical and a higher development than in Germany. The German philosophers, Kant, Fichte, Schlegel, Schleiermacher, Herbart, Benecke, and Jean Paul, associated the theory of education with their speculations on human nature; even the great poets, Lessing, Herder, Goethe, and Schiller, have contributed through certain grand ideas to the construction of a science of education.

In the nineteenth century Germany took part in the great movement toward a more liberal education for women. There is no more an inclination toward the opinions of the over-courteous moralist, Joubert, who said: "Nothing too earthly or too material ought to employ young ladies—only delicate material should busy their hands. They resemble their imagination, and like it should touch only the surface of things."

Pestalozzi, Schlegel, Schleiermacher, and Jean Paul Levana stand for a higher and more serious education for women, but

they conclude that their training should be for their own interests, their nature, and their proper destination—more a domestic education than for entering a public arena; they wish woman to remain woman. Bettie Gleim is the first who demands for girls, as well as boys, a public education; but she finds no general sympathy. Neverthless, it is considered necessary that women should be better instructed. The reasons given for it in the convention in Weimar in 1875 were:

1. In order that they may be able properly to raise their children, of whom they are the natural instructors.

2. In order that they may be the fit companions of their husbands—that they may feel an interest in their pursuits and participate in their life—such being a condition of conjugal happiness.

3. In order that they may not quench by their ignorance that inspiration of heart and mind which previous studies have developed in their husbands, but that they may nourish this flame by conversation and reading in common.

In the decree of 1875 for the higher girls' schools, which had been left until then to the management of private enterprise, ornamental and decorative elements predominated completely over that of use. Women should become pictures of a certain gorgeous attractiveness—not white sunlight, but a kind of rose-pink, artificial bedizement. It is true that woman is the companion of man upon earth, yet she exists also on her own account. She needs above all an education which prepares for direct self-preservation —not numerous accomplishments for the purpose of making conquests. It is a question of the true measure of value of knowledge to herself—not its effects on a husband. It is a question of not catching the shadow and losing the substance. In 1887 a petition was sent in from several women's clubs which had sprung into life, headed by H. Lange, saying that by the multilateral of the subjects of studies a solid education would be impossible, and only a superficial knowledge could be acquired. The first consideration would be to give women, not an ornamental domestic education, but a preparation for the vocation of life. Female educators, with Helene Lange and Luise Buchner as

leaders, demanded a larger field in teaching and the instruction of the higher grades of girls' schools, which had until then been entirely in the hands of men who followed the teaching of Rousseau and polished the mentality and manners of girls, to the end, that they might become companions for husbands. The granting of the petition was partly due to the Victoria Lyceum in Berlin, an institute which since 1868 had been devoted to the accomplishments of women. In 1888 special scientific studies for teachers were added, and, with the permission of the *Kultusministerium,* female teachers who had been employed in the higher girls' schools for at least five years passed after a three years' course the examinations for principals. Step by step they fought their way; in vain men urged that female teachers for the higher grades were neither necessary, nor desirable, nor worthy to be admitted. The ice was broken, and there was no holding back any more. It had been easy enough to suppress the single woman; the women united had become a force. In 1894 the *Kultusministerium* reformed the *Höhere Töchterschule,* and at the same time the normal school, which had been in existence since 1875, was enlarged from a two- to a three-year course. In several universities preparatory courses were arranged, extending to six semesters, for principals' examinations.

Plato based his recommendations of equal education of men and women on equality of civil functions; in modern thought it is the conception of equal rights and of equal abilities that tends to prescribe the same course of intellectual training for both sexes. I have my doubts of its being advisable to pursue entirely the same course of studies. At all events, I am opposed to coeducation after the age of fourteen. While girls are endowed with a quick intelligence, while they divine and see more quickly than boys—Bronson Alcott says, "Divination seems heightened to its highest power in woman"—they lack in continuity and depth of thought. Prolonged attention wearies them; they are too mobile to be profound. There is no reason why they should have a less serious education than boys; but the methods employed ought to be different. Then, again, the period from fourteen to twenty years of age should be entirely given to study; but naturally the

young man thinks more of the roguish eyes and laughing lips he sees at his side than of his mathematical formulas; his Latin might suffer less. He will without doubt be sure of his *amo, amas, amat,* and the girl cannot help to sympathize with the poor lad, and sighs *amemus.* Too early marriages are often the result; boys of twenty or still younger spoil their prospects in life by marrying, and in most cases, after a short time, they conjugate the past *amavi.*

Like mushrooms, teachers' associations have sprung up, many teachers' conventions have been held, and the general German teachers' association numbers now seventeen thousand members. They not only extend their arm all over the fatherland, but also reach into foreign countries. In England there is a German teachers' association, under the leadership of Helene Aldermann, and one in France, under the leadership of Miss Schliemann. It is their purpose to watch the interests of teachers and help them in every way—those who either wish to perfect themselves in foreign languages, or who come as teachers of German only. In London a home and sanitarium are connected with the association. In the year 1900 a new law for teachers' examinations was passed, and philosophy was added as a compulsory study. In 1889 was founded the first college—*Realgymnasium*—for girls, which was changed in 1893 by Helene Lange, its principal, into a *Gymnasium* preparing students in a four-year course for the university. This college corresponds to the collegiate course of four years, resulting in the conferring of the degree of A.B., in Chicago, Yale, Harvard, and Cornell universities. With the fifth year the conferring of the German universities begins.

With this the opening for women in the study of medicine and similar sciences was accomplished. Soon followed others and there are now fifteen colleges in Germany with a four- to a six-year course. They are in Berlin, Karlsruhe, Leipzig, Hanover, Königsberg, Stuttgart, Breslau, Munich, Hamburg, Frankfort, Cologne, Mannheim. In Prussia women provided with the certificate are admitted to hear lectures but are not matriculated as in other states.

Although nothing hinders German girls from entering uni-

versities, yet, since they are inclined more by nature for domestic life, or since German fathers are still opposed to that kind of education for girls, only a small percentage take advantage of it. Until 1903 there were only 122 graduates from the colleges, while from the normal schools there graduate yearly a large number without becoming teachers; which proves that the study of modern languages is preferred by women to the study of ancient, which is the greatest difference between the colleges and the normal schools. In Baden, Würtemberg, and Hessen many institutions have coeducation.

Compulsory education begins at the age of six and continues to the age of fourteeen. Negligent parents are liable to punishment by fines or even by imprisonment. There are five grades of instruction for girls, so that each one has the opportunity to receive the education adapted to her need:

1. Public schools, without charge for tuition—*Volksschule.*

2. Manual-training schools, also free—*Fortbildungs- und Haushaltungsunterricht.*

3. Public middle schools, where tuition is charged, and private schools—both called *Höhere Töchterschule.*

4. Normal schools—*Seminar.*

5. Colleges for girls—*Gymnasium.*

Both public and private schools are under the supervision of the state, and both receive from the state a yearly allowance.

In Prussia there are 36,138 free public schools, attended by five million children; the cost is $67,480,000 annually. Boys and girls receive the same instruction. They are attended by the children of the working classes, who receive not only free books, but are fed and clothed also if necessary. A bun and hot milk are provided for those who have had no breakfast at home before lessons begin.

Not more than forty pupils are permitted in one room. They have eight grades, and the instruction might be compared with the grammar schools in America. The curriculum is: reading, arithmetic, composition, grammar, religion, geography, German history, natural science, drawing, singing, gymnastics, and needlework for girls.

Connected with the *Volksschule* is the manual-training school for girls of from fourteen to sixteen years, where the instruction acquired is strengthened and completed, but principally domestic economy, cooking, washing, ironing, and serving are taught, This is compulsory only in about seven German states. In Prussia, Bavaria, and Würtemberg it depends on the parents if they will send their children after their fourteenth year.

In Prussia there are 213 higher public schools, attended by 72,932 girls. Connected with these schools are 3,347 male and 6,200 female teachers. This gives about 15 pupilss to every teacher. The teachers' salaries are: for male principals, $1,360; for female, principals, $550; for male teachers, $800; for female teachers, $460. The tuition of the higher public schools ranges from $30 to $50 yearly; for the private schools, from $50 to $100. The cost of conducting the higher public schools for girls is $2,098,230 annually, of which $1,251,950 is paid by tuition.

The *Höhere Töchterschule* adds to the curriculum of the *Volksschule:* literature, ancient and general history, rhetoric, geometry, French for seven years, and English for four years. The course is ten years for pupils from six to sixteen years of age, but, considering that Saturday is a school day—which adds two years—and that the yearly vacations are one month shorter —which adds another year—there are in reality thirteen American school years. This instruction might be compared with the education through high schools except that the membership in rooms being much smaller and the curriculum having been pursued throughout the school course, it is more individual and has more depth. The immediate object of the teaching of foreign languages is to enable the pupil to understand the easier French and English writers, to grasp easily the meaning when the languages are spoken, and to use them with some facility both orally and in writing when they are applied to the simpler forms of everyday intercourse. The more indirect aim of the teaching is that of introducing the pupils to an appreciation, as far as possible, of their mental development, and of the manners and customs of the two foreign nations named. Reading occupies a central position during the whole course. Grammar is not taught

systematically from the beginning, but is deduced from the reading and gradually built up from concrete observations. Practice in speaking plays a great part in this course. German history is taught for three years; ancient and general history, for two years each; geography, for seven years. Physiography forms an important part of the course. Natural sciences are taught for six years; zoölogy and botany, for four; physics and chemistry, for two years. In arithmetic special stress is laid on the "oral." Literature and composition are regarded as of importance.

1. The *Seminar* is connected with the *Höhere Töchterschule,* and prepares girls from sixteen to nineteen for teachers' examinations. These examinations are about the same as those in the United States, with the difference that in the normal school in Germany neither Latin nor Greek is taught, but French has been taught for ten years and English for seven years, and both languages are mastered and familiar. The *Gymnasium* is also connected with the higher girls' school; it prepares girls from fifteen to nineteen years for the university.

2. Girls who do not go to normal school or to college finish their education mostly in a pension away from home, either in Germany or in a foreign country. In these boarding-schools are from ten to twenty girls who receive lessons from special teachers.

Education is now almost definitely systematized in Germany. There have been vigorous efforts toward a rational pedagogy—toward the science of education which, as Virchow says, "ought forever to proscribe the gropings of an ignorant education whose experiments are ever to be gone over anew." We live in a world where much is to be done and little is to be known. A notable step has been made to settle the important question of the end and the means—what subjects of study and instruction shall be chosen, and by what method the child can be taught rapidly and well. The object is to teach as completely as possible the knowledge that is best adapted to develop individual and social life; there is a dislike for glancing at subjects, for painting and tattooing the girls' schools with a little Latin and Greek, because they form a part of the education of a gentleman. Boys study Latin for nine years, eight hours each week, having about nine thousand

lessons altogether; in girls' schools it is considered more profitable to devote this time to modern languages. The comparative merits of classics are also revived in boys' schools; permission to enter the university is given to boys from the *Realgymnasium,* where no Greek is taught and less time given to Latin.

The education that comes through amusement dissipates thought. Labor of some sort is one of the great aids of nature; the mind of the child ought to accustom itself to the labor of study. You will teach a multitude of things to a child by means of pictures, but you will not teach him to study. Kant's idea of education for training, culture, and disciplining the mind, as distinguished from an education whose only aim is to impart knowledge, received recognition in Germany. Imagination is cultivated to a high degree. Mythological history and sacred history are taught before history proper, because their legendary and fabulous character offers a particular attraction to the child's imagination.

A very important factor in school life is discipline. There is a chaotic state of opinion and practice relative to government. Richter writes:

> If a secret variance of a large class of ordinary fathers were brought to light and laid down as a plan for studies of a moral education, they would run somewhat after this fashion. In the first hour, pure morality must be read to the child; in the second, the chief matter is that you should succeed in the world; in the third, do you not see that your fathers do so and so; in the fourth, you are little and this is only for grown-up people; in the fifth, the eternal determines the worth of a man, therefore rather suffer injustice; in the sixth, but defend yourself bravely if anyone attacks you. Changing his morals during the twelve hours of the day, the father will never notice the instability of this twisted convex-concave mirror. As to the mother, she is neither like him nor yet like that harlequin who came on to the stage with a bundle of papers under each arm and answered, to the inquiry as to what he had under his right arm, "Orders," and as to what he has under his left arm, "Counter-orders;" but she might be much better compared to a giant who has a hundred arms and a bundle of papers under each.

The lesson drawn from this is: Do not lack consistency in discipline. There is no lack of consistency in German discipline. There is no lack of consistency in German schools. When the teacher commands, he does it with decision. The

same offense is treated with like severity to all. But Richter says also: "The best rule in politics is said to be *pas trop gouverner.*" This is also true in education; and there is the rub in German schools. German children go to school because it is a duty, and because the German mind naturally is athirst for knowledge. American children go to school because it is a pleasure. Why? In America discipline is more adapted to produce a self-governing being than a being to be governed by others. The German teacher is too much of a passionless instrument; we must love children in order to know them, and we divine less by the intelligence than by the heart. The German teacher is too much of a pedant—he sits too high on a throne. Kant's book *Moral Catechism* is still followed too little. Kant wants to substitute in a child the fear of his own conscience for that of men and divine punishment, inward dignity for the opinion of others, the value of actions for the value of words.

In America I find that clandestinely copying from other pupils and deceiving teachers are considered mean and dishonorable acts not worthy of a gentleman or a lady. In Germany to pin the lesson which ought to be recited by heart on the back of the pupil in front, to read it from a handkerchief or cuff, to copy right and left, are considered perfectly proper. They do not deceive a friend, but only get even with a teacher. But worse than this is inconsistency, or the permission of rudeness and disobedience from pupils to teachers; better even is a barbarous form of government, carried out consistently, than a civil one, inconsistently. I hope this drawback will soon be removed. German teachers will find that they may descend from their throne, share the joys and little troubles of their pupils and be friends to them, without losing their authority. The more we study the body and the mind, the more we find both to be governed, not by, but according to, laws such as we observe in the larger universe.

The day has gone by for physically delicate women; this age demands Hebes and young Venuses with ample waists and veritable muscles. To procure them, public and private schools furnish playgrounds, and there is a fair share of time for out-of-door games and a recognition of them as needful. Germans

always liked to produce a robust woman; they are somewhat like Spartans; they are hardened to all kinds of weather. Most girls not only walk to and from school, but also daily take at least a one-hour's regular walk in the park. Robust health and abundant vigor are not considered plebeian. German girls are well known for their red cheeks and healthy color. They are fond of activities in sport, and gymnastics are given by special teachers. Germans are "early birds." "Morgenstunde hat Gold in Munde!" Boys' schools are from seven to one o'clock; girls', from eight to one. Thus there is given the children plenty of time in the afternon for home work, music lessons, and at least from one to three hours for out-of-door games.

A great error—coloring, or rather discoloring, the minds of the higher and lower classes—has sown wide dissension and wider misfortune through the society of modern days; this error is the misinterpretation of the words "woman's rights." They do not mean, as many think, that women want to be less effeminate. The fact that there are some loud and bold women has nothing to do with "woman's rights," which do not mean vulgar assumption. Having opened a wider scope than home is not inconsistent with her cultivating the characteristics naturally expected in womanhood—a pleasant temper, a cheerful disposition, and the ability of making a lovely home. It does not take the charm from femininity if she should be quick to seize an opportunity and shrewd to find a point of vantage. If circumstances call her out into the fight for bread and butter, let her be prepared to rank with men and make ever so fine a name for herself in whatever vocation she chooses; it need not detract one whit from her womanliness, provided she keeps herself unsullied of soul and and tender of heart. German men do not respect rude or noisy women—nor do you. Girls should be trained to be jolly, warm-hearted, impulsive, and independent; they should not bluster, but be quiet-voiced; they should be, in the orchestra of human life, a flute, not a trombone. Robert Browning gave, with one stroke of his pen, the most adorable portrait of a woman when he wrote of the beautiful Evelyn Hope: "God made her of spirit, fire, and dew."

THE NEW VOYAGE OF THE INNOCENTS

KATHERINE ELSIE CHAPMAN
One of the Innocents

[NOTE.—A group of Chicago people, some of them students of the University of Chicago, are spending three months in Paris this summer studying the French language. These students are under the guidance of Mlle. Lorley A. Ashléman, teacher of French in the University Elementary School of the School of Education. After a description of their voyage, which the want of space prevents printing here, Miss Chapman gives the following account of their studies.—EDITOR.]

Our final destination was the *pensionnat* of Madame Fauconnet at Fontenay-sous-Bois, a beautiful suburb of Paris which is, in fact, what its name indicates, a village by a wood. We reached our new home by omnibus. As we rambled and jolted past the old wall of Paris and struck out into the open country, with trunk, suitcase, handgrip, and bandbox piled atop, with the dames packed inside like herring until their voluminous drapery overflowed, and with the most aspiring maiden of the party perched aloft by the driver, we must have looked truly unique and distinctively American, judging by the wild-eyed astonishment of the natives. One very personable Frenchman stopped by the side of his spouse and stared after us until our plethoric vehicle vanished in the distance.

It was a warm, weary, dusty, doubting company which reached the *pensionnat* at seven-thirty in the evening. The first glance at our haven revealed nothing but a lofty iron fence shrouded in impenetrable foliage, and a tall roof arising amid the trees. But the broad iron gate stood wide open, and it was but a moment before our doubts and fears were dispelled by as warm and friendly a welcome, accompanied by as true an American handshake, as ever enlivened the heart of a traveler. When Madame Fauconnet led us into the salon, and soon after into the *salle-à-manger* to an abundant dinner served with true French grace, we began pleasantly to realize that we were at last in France.

And here in this lovely retreat, amid these idyllic surroundings, amid conditions as perfect as could be found upon earth, the Chicago University Innocents are pursuing their various lines of study, and hoping to pass their examinations in three majors in the autumn. Refined and cultured French is the only language spoken around them. The beautiful garden, with its perfectly kept walks and full-blooming flower-beds, furnishes a daily rendezvous for study and recitation. Beneath the foliage, near the vine-clad fence, we sit at the little round tables, or traverse the pebbled *place* and imagine how naturally the peripatetic school of philosophers might have fallen into such deep contemplation and evolved such perfect systems of thought in surroundings like ours. And, moreover, the *bois* itself extends almost up to the garden, where, in shady retreat, the disciples may wander, book in hand, surrounded by shade cool and deep, and stillness so profound that thought may not only peep through her casement, but come out and walk, unmolested by the reacting currents of the world. Here the soul may expand her wings. Food for both is not lacking in the instruction presented. Besides the daily review in the principles and construction of the language, two hours daily are devoted to lectures by eminent scholars of Paris. Mr. Schrader, well known in America as professor of geography in the École d'Anthropologie, and officer of the Legion of Honor, speaks upon geography, especially in its relation to the distribution of the races and its influence upon civilization. Mr. Debussy, *licencié ès lettres,* is treating of modern French writers, especially in the drama. Mr. Paul Lesaunier, professor of history in the École des Roches, gives French history. All treat their subjects in a broad and academic manner, and with an ease of style which furnishes an agreeable variation to the formal limits of the college textbook.

In August we shall have the further privilege of lectures by M. Paul Fauconnet, *agrégé de l'Université* and professor of philosophy in the Lysée de Cherbourg. He is the son of Madame Fauconnet, our kind, intelligent, delightful hostess.

One delightful evening was passed in the company of Pastor Charles Wagner, who resides in Fontenay-sous-Bois, and who

honored us by a call shortly before his vacation trip to Switzerland. In delightfully broken English he talked of his experiences in the United States, and of how much he had enjoyed them. Our first Sunday morning in Paris was devoted to attending the old chapel in which he was preaching for the last time before removing to the more commodious building which has been made needful by the increasing crowds which seek out his preaching. Mlle. Muller, who has given twenty years to conducting students about Paris, has charge of the grammar department of the instruction to the Innocents, and takes charge of all the excursions. Two days in the week are given to the palaces and the art gallaries, and usually two evenings weekly, by those who desire it, are devoted to hearing the purest French diction as spoken in the Comédie Française or other theaters of Paris.

The students already realize that they are beginning to absorb the subtle aroma which pervades the atmosphere of this interesting and highly artistic race. They are realizing that, truly to know a language, one must know the people who speak it; thoroughly to absorb it, one must breathe its native air and dwell in its native homes. It is a privilege extended to few to be received into the family life of a true French family. The charming affection, the easy cordiality, the lively expressions of interest, show that not in America alone are there happy homes, and that France, far from spending all her time in the cafés and boulevards, retires behind her high-walled gardens to experiences replete with all the joy of the family affections. Our Innocents feel assured that by thus mingling for a few months with their daily life they are absorbing more French from the French themselves than could be laboriously achieved by the same number of years over textbooks. To know the French people in their humanity, their achievements, their place in the wide circle of nations, is not only to know *French;* it is to know more broadly all life, all nations, all humanity; thus are the fine threads of sympathy woven which link all to each other in true comprehension. "For so the whole round world is bound in golden chains about the feet of God."

[*To be continued*]

THE SANITARY REGULATION OF THE SCHOOL-ROOM WITH REFERENCE TO VISION*

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If the ocular apparatus of the average child were by nature adapted to the amount and kind of eye-work that he is ordinarily called upon to do, it would not be so necessary for us, as physicians, to consider, as we often do, the details of school hygiene. In spite of the fact that the eyes are the organs, above all others, that are called upon to labor excessively in the effort to obtain an education, they would cause us little or no anxiety if there were any provision in them for an unusual amount of accommodative effort—for excessive focusing for near work in particular. In the great majority of cases the opposite is true. We are all of us born farsighted, i. e., with the vision and visual apparatus of our savage ancestors, and with these eyes we deliberately proceed to the school-work that civilization demands, which, for its easy accomplishment, necessitates quite a different type of eye, viz., shortsighted or myopic globe with an oculo-muscular system in correspondence with it. Happily, quite a few of us run the gauntlet of these dangers to our nervous and digestive apparatus and to our sense organs with little or no damage, but some of us experience ills from which we recover either partially or not at all.

In estimating the value of sanitary precautions in the regulations of the average schoolroom it must be remembered that a respectable percentage of children begin their shool life with congenitally defective eyes. Quite apart from the treatment of this aspect of school life, which I do not propose to discuss here, it follows that any advantage accruing to the merely farsighted

* Read at the Annual Meeting of the American Academy of Medicine, Boston, June 2, 1906.

pupil in easing the burden of his eye-strain is of manifold greater assistance to the boy or girl who assumes the tasks of study with astigmatic, diseased, or organically defective eyeballs.

Even if the eyes of every school child were, as they ought to be, carefully examined every year for the purpose of detecting and treating all errors of refraction, all defects in accommodation, and all anomalies of oculo-muscular balance, there would still remain many who, from incurable or only partially curable eye defects, need every possible aid to comfortable vision that can be afforded them.

It must also be borne in mind that there are numerous diseases of the other sense organs as well as of the system generally that, neglected or incapable of cure, reduce the effectiveness of the visual function. Even where the eyes are comparatively free of congenital defects or active disease, ineffective digestion due to poor food or other cause, acquired or hereditary diseases of many sorts, obstructed breathing, imperfect mental development, etc., not uncommonly serve to weaken one or more parts of the visual mechanism, and the child so affected is unable to continue his studies.

It is, consequently, not alone for the sake of preserving the eyesight of the ordinary healthy pupil that hygienic precautions are of supreme value in the schoolroom, but that we may not add to other considerable burdens the serious drawback of eye-strain.

In considering a few of these questions let me say that although the discussion of them has been going on since the early days of public education, they still present ever new, because ever changing, aspects, and this fact is another justification I offer for presenting them to you once more.

The illumination of the schoolroom.—This is the oldest of the questions relating to the hygiene of school vision. It seems strange that, although one of the simplest and most easily applied of the rules of school sanitation has been known for many years, it is so often overlooked. I refer to the *dictum* of Risley, that at any hour of the day in any season of the year it should be possible to read the finest (diamond) print in any part of the schoolroom. If this can be done the illumination is *sufficient.* It may, of

course, be *excessive* (too strong light may be admitted to the school, or the artificial illumination may be unduly concentrated) or even too variable, but these are not the usual faults. Speaking for Chicago, I believe that, considering the rapid growth of the city and the constantly increasing demands upon us for school space, our school board has done wonders, yet there are many schoolrooms in which pupils and teachers strain their eyes, worry their nervous systems, upset their digestive apparatus and contribute to other forms of mental and physical distress by attempting to see by insufficient or improper illumination.

I do not, of course, say that in a crowded city with its atmosphere befouled with smoke it is always possible to secure, especially during the winter, an ideal illumination, but the continual agitation of this important matter has enabled us to obtain better-built and better-lighted schoolhouses. Largely due to this cause is the decent light in our public schools as compared with the generally wretched illumination of our federal, state, and municipal buildings. Everybody, even the proverbial schoolboy, knows that in the construction of the schoolhouse the distance that separates it from surrounding buildings should be at least twice their height and that the window space of the exterior walls having a northern or western exposure should be quite one-fourth the floor space, although it may be only one-fifth of the floor area when the schoolroom has an unobstructed southern or eastern exposure. Of course, I need not say that the application of this rule must be somewhat modified, as in the case of all rules, by individual instances. In small rooms with a generally clear atmosphere, or where the school buildings can be elevated well above their surroundings, a smaller proportion of window space may be allowed.

During winter, or where, as in some localities, it is a question of artificial lighting or no school at all, the respective merits of kerosene, gas, electricity, and the various forms of lamps are often discussed. I have had occasion to say, in this connection, and I repeat it here, that as a choice of evils I would prefer to have the pupil take an indefinite holiday than allow him to be immured during school hours in some of the educational dungeons that I

have known to masquerade as recitation and study-rooms. I need not enlarge upon the physical, moral, and mental ills that come to children that are forced to study or even to sit all day in a badly ventilated, artificially lighted, interior schoolroom. Better a healthy street arab than a shortsighted, anemic, neurasthenic schoolboy.

If artificial lighting is unavoidable, the same law that governs the employment of sunlight should ever be borne in mind; *the illumination should resemble as nearly as possible diffuse sunlight; it should be sufficient to permit diamond print to be easily read in any part of the room, and it should shine upon the work to be done, and not, either directly or by reflection, into the eyes of the pupils.* After all is said and done, if the lighting, natural and artificial, of all schoolrooms realized these standards, we should have few excessively myopic and fewer nervous symptoms to treat among our child population.

Owing to recent improvements in electric lamps, to the fact that the electric light does not to any extent overheat or vitiate the atmosphere of the schoolroom, to the diminished danger of fire, and to its greater convenience, it is generally to be preferred to gas or kerosene. It is, however, capable of greater harm to the vision and much more likely to produce eye-strain unless judiciously arranged. As a rule, I prefer a sufficient number of 32 candle-power lamps placed, in ground-glass globes, near the ceiling. The dazzling, uncertain, flickering, arc-lights with their irritating violet rays should never be used for school lighting or, in my judgment, for any illuminating purposes when any close work is to be done.

That the sunlight should not shine into the eyes of the school children will require a proper arrangement of the seats, desks, and blackboards. Of course, this important detail in school-house building should receive the careful attention of the architect, but it can generally be satisfactorily arranged, it matters not what exposure the schoolroom may have.

Inasmuch as the great majority of pupils are right-handed, the rays of light from whatever source of illumination, from the left, or from the left and rear, should fall upon the desk, book,

writing pads, etc., in near work, and from the rear or obliquely upon blackboards, maps, wall diagrams, or other objects required to be looked at by pupils from distant parts of the room. If windows are upon the right side of the room, they should, as in artificial lighting, be placed as near the ceiling as possible. It must be remembered that the eyes require *sufficient,* as well as *proper,* illumination to do without strain the work of ocular fixation. As Risley points out, these supplementary windows may, in summer, be used for ventilating purposes. He also suggests that where for any reason there is not sufficient sunlight admitted to a room, a second sash may be adjusted to each window on the left, which, when dropped to an angle of thirty-five or forty degrees, will act as a reflector and throw the light from the sky upon the desks of the pupils. I have myself seen such a device employed for directing the sun's rays upon a white ceiling and then by secondary reflection upon the objects in the room below. In this way the sun's rays were sufficiently diffused to render them effective and not irritating to the eyes.

While on this subject I am, of course, distinctly opposed to such means as Luxfer prisms for school lighting, valuable as these devices undoubtedly are in illuminating basements and other dark rooms of our city buildings, particularly. All schoolrooms in which pupils are expected to use their eyes to any extent should be properly lighted, outside rooms—for many reasons besides the fact that they are necessary for the ocular well-being of the children. Indeed, in the ideal school building the rooms in which pupils spend most of their time should have a south or southeastern exposure. Excessive sunshine could be regulated by double screens—the one semi-opaque and colored light green for bright summer days, and the other cream or light gray for the less dazzling though direct sunshine of winter. If this were done recitations and other occasional tasks could be worked out in rooms on the opposite side of the building.

The tinting of the walls.—Although much has been written on this subject and although the rules for successful mural coloration are easily remembered, there still exists some confusion in the minds of many educators regarding this important matter. As

before stated, if the ocular apparatus is adjusted (especially during such near work as reading, writing, drawing, etc.) for diffused sunlight, the wall tints should be chosen in view of that fact. Each schoolroom should be considered by itself. If it be situated above the ground floor, has a southern exposure, faces a wide street or other large space, and particularly if there be no tall building to shut out the sunlight, the color chosen may be a light green, dull gray, or even a deep orange relieved by a lighter ceiling tint of the same color mixture. On the other hand, the walls and especially the ceiling of a recitation or study-room with a northern exposure, especially if the window space be insufficient or the view obstructed, should be papered or painted a light buff or, better still, dull white. To assist in lighting up such a room the walls should be regarded as reflecting surfaces and ought not to be unnecessarily covered with maps, diagrams, pictures, blackboards or figured wall papers. Where it is possible, dull paints on a smooth surface are preferable for use in such a room to burlap, calcimine, or wall paper.

A wider choice may be allowed in rooms and halls with a bright southern exposure; indeed, if for this reason alone it is a pity that *all* rooms cannot have either a south, a southeast, or an eastern outlook; it would permit of almost unlimited color schemes and mural decorations. Between the brightest southern exposure and the most obstructed northern view, we may then say that the mural colors should be chosen to suit the individual case. As you are aware, there are several photometric schemes devised to reduce color schemes in schoolrooms to a scientific certainty, but practically all that one needs to remember is comprised in the foregoing considerations.

Reading matter.—The size of the letters, the style of the type, the width of the printed columns, the spacing of the words and lines, the color and texture of the paper used in the make-up of schoolbooks are all important factors in the prevention of eye-strain and ought to receive more attention than they generally do. Without entering too deeply into these subjects I believe that the rules laid down by Cohn ought to be followed. He advises that the weight of letters like *n* be not less than 1.5 mm. and the down

strokes be at least one-fourth of a millimeter thick and, that the the vertical distance between the lines be not less than 2.5 mm.

Inasmuch as the strain upon the eye muscles, both internal and external, is in direct proportion to the length of the lines, he suggests that the columns of reading matter never exceed 10 cm. Furthermore, as ocular fatigue is, other things being equal, more easily brought about in younger children than in those more advanced in years, these measurements should be increased for those of tender years. Edward Shaw proposes that for the first year in school the type should be 2.60 mm. high and the leading 4.5 mm.; for the second and third years the height ought to be at least 2 mm. with leading of 4 mm. For the fourth and subsequent years 1.8 and 3.6 mm., respectively. Considering the unavoidable variation in school lighting, I do not consider these figures unwarrantable.

A good deal of discussion and much difference of opinion is held as to the proper texture and color of paper in schoolbooks, but I do not think we shall be far wrong if we insist on a dull white paper printed with jet black ink. Likewise the copybooks, pads of paper used in school exercises, in the practice of handwriting and as substitute for greasy, dirty slates (now happily things of the past) should be a "dead" white, the ink deep black and the lead pencils as black as they can be had. Where illustrations requiring a highly calendered or shiny surface are required, these should be in the form of "tips" or inserts; the fewer of them the better. I may say in passing that the fewer magazines printed on glossy paper the child is allowed to read the better for his eyes.

Handwriting.—As to the relative merits of perpendicular, intermediate slanting penmanship and the decidedly slanting forms of penmanship as well as the postures assumed in each, I have little to say. In choosing one or other, let us not forget that easy legibility is desirable both for the writer and for the reader, and that it is important that the pen strokes should be thick enough to be read without eye-strain. When properly arranged desks are used and the illumination is good, perpendicular penmanship (taught in the upright position) certainly presents ocular advantages over every other form of handwriting with which I

am acquainted. Writers on this subject frequently speak of curvature of the spine as the chief danger to the child when he assumes the abnormal positions so long associated with the old Spencerian copybook. It is time to remind them once more that myopia, chronic headache, and other forms of eye-tire are much more frequent, if not more important, consequences. The strain upon ocular muscles in their efforts to make two eyes functionate for hours at unequal distances from the near point often produces those varied, complex and disastrous results that we are in the habit of speaking of as "eye-strain."

In all forms of writing and reading the book or paper should not be allowed to approach the pupil's eyes nearer than 35 cm. If he persists, with normal surroundings, in reading or writing at a nearer point, one may suspect an approaching myopia, or that he has a refactive (farsighted, a stigmatic, etc.), or accommodative error that demands attention.

A few words about *blackboards and maps.* The objections to many of the former are manifold. As long as they are dull finished and kept clean of chalk dust, they do not reflect the light into the eyes of the pupils. They are not objectionable except that they may interfere with the proper lighting of the room. All blackboards should be frequently cleaned with competent erasers and the writing upon them should always be large and heavy and be done with soft, white crayons. When colored chalks are used one must recollect that yellow and blue are the colors most easily recognized by pupils with defective vision and defective color-sense. Wall maps of all sorts ought to have a restricted use in the schoolroom, owing to the extreme difficulty with which a mass of names (some of them in small print) are made out by pupils some distance away.

Size of the schoolroom.—Apart from the question of air, space, ventilation, and lighting, the size of the schoolroom is very important from the visual standpoint. When pupils are seated at desks too far removed from blackboards, maps, specimens on exhibition, etc., they are likely to suffer from eye-strain, particularly if they have weak eye muscles or are slightly shortsighted. In these events the ocular apparatus makes an abnormal effort to

overcome the defect and reflex symptoms result. Probably 25×30 feet are the maximum ground measurements. Such a room, with proper ceilings, window space, etc., will accommodate from 45 to 50 pupils.

Detection of disease.—I have already referred to the desirability of having school-children's eyes examined at the beginning of the scholastic year. Let me say briefly, in this connection, that the scheme first proposed by Dr. Risley and subsequently elaborated by my associate in medical practice, Dr. Frank Allport, provides that at least one teacher in each school be instructed in this work, that it can easily be carried out in practice, and it has been recommended by many Boards of Health and adopted by a number of School Boards.

In a few of the states these methods have also been adopted by the legislature, and in my opinion they ought to be further employed as the most practical and most useful means of detecting diseased eyes and ears that I know of. The examining teacher does not pretend to diagnose the case in hand; he or she merely applies certain tests and makes sundry observations that any layman may, to determine whether or not the services of a physician are desirable—whether further medical examination is indicated or not.

The school desk.—I am well aware that I am walking in slippery places when I approach the desk question, but it has a very important bearing on eyesight. As a proof that I am not commercially interested in any particular desk, I will say that there are, in my judgment, several good forms of that kind of school furniture on the market, the names of whose makers I shall refrain from mentioning.

First of all, I am in favor of *single,* adjustable desks with a sliding top, as better suited to the *minus* and *plus* distance required for the comfort and accommodation of the growing individual child. The desk should be adjusted vertically at the beginning and in the middle of each school year. It should be without foot rests; the lid should have a slope of 10 to 15 degrees as best fitted to the perpendicular or slightly slanting chirography. When, for certain kinds of work, it is necessary that the desk be almost flat,

a couple of small supports from the interior of the box desk may easily be arranged to accomplish this end.

Length of time consumed in schoolroom study and recitation.—So far as ocular strain is concerned, surely experience will teach the observing educator that when the attention is for too long a period fixed upon a book, blackboard, writing pad, map, or other object, or if the class is too long bombarded with questions regarding the same, all kinds of fatigue, mental and physical, result. So is it with the oculo-nervous apparatus. It is of course difficult to lay down a rule applicable to every child. Edward Shaw believes, and I am sure most oculists will agree with him, that recitations should not for the first year exceed 10 minutes in length, for the second year 15 minutes, and so on, gradually increasing the study period until the highest grade is reached with a maximum of 45 minutes. Similarly, study hours in school should be frequently interrupted in the interest of eyesight and the nervous system.

Study out of school.—If I had my way, I would not allow any child to do reading (especially of newspapers and magazines) or studying out of school hours until he or she were at least ten years of age. "Oh! how will they pass their time at home?" and then adds the anxious mother with a sigh: "There is so much for them to read!" My answer would be: "Read to them yourself or have somebody else do it, or, better still, give them some constructive manual work to do in their playroom during the winter evenings, and turn them out into the air when the days are propitious." Especially for our precocious, over-stimulated, native-born American children exercise in fresh air, sound sleep, and healthful, interesting exercise are more desirable than rubies and—at least as far as the eyes are concerned—are in the end a better commercial investment.

In closing this incomplete study of the schoolroom and its influences upon eyesight for good and evil, let me draw your attention to the fact that almost without exception the laws of ocular sanitation are in accord with other rules of personal hygiene, thus furnishing evidence of the dimly recognized truism that ophthalmology is not an art or a science apart, but is merely one chapter of the whole philosophy of healing.

THE GROUP IDEA VERSUS THE GRADE IN THE ELEMENTARY SCHOOL

LUCY E. BROWNING
Chicago

"If the school were to be viewed in a strictly scholastic sense, its function might be briefly stated as the cultivation of thought and expression. If, on the other hand, an ethical point of view is to be taken, then the school's function might be summarized as the promotion of the best social life." It will readily be seen that these two views supplement each other and as a working plan may be viewed as one. The modern school is not only expected to give the pupil a knowledge of the three R's, but also to teach morality, train character, and make good citizens.

Present-day psychology considers that education is a process of growth; that, as Froebel said, the full and complete development of each stage is necessary for the development of succeeding stages. The child is a part of society. He is not fitting himself to be a member, he *is* a member, of society. The home and the school must not be separated. It is for the school to make its curriculum fit the child. The problem is not to give the child such material as he will need when he is grown, but what he needs now.

The school must recognize the great fundamental instincts and turn them in the right direction. The hunting and shelter instincts develop in the child as they did in the race, and should be turned to account by being used as motives for hand-work, stories, and reading.

In the recapitulation theory there is simultaneous and parallel development. Nowhere is there series or successive development. Our problem is to take the raw feelings and give them opportunities to grow in right directions. Children (and adults) must want the right things.

Growth is by pulses; it is not steady. This is seen in child play. The child becomes completely immersed in one thing and goes on with that until he has found all that he can in it. Then he plays something else in the same way. It seems to me that there might be times in school when an absorbing interest could be carried out in the same way. Mr. Burbank and others have shown that with plants there is a period of adaptation and mutation when new species are easily formed. After that period they cannot be formed. With human beings after the nascent period it is only with difficulty that new acquisitions are made.

It is true that the growing process is going on during the twenty-four hours, and not only while the child is in school. Does the school during a few hours give opportunity and means for the best development of each child? To some of those who have this aim in view the present system of grading seems detrimental. Mr. Jackman says that the children are graded according to age, knowledge, and skill, which he shows to be unnecessary. And still further, he says: "The influence of the grading system upon the pupil is necessarily bad. It retards his progress through the elementary school, and it fosters selfishness. Under the old ideals of education the children must exert themselves to excel each other. Under the new, members of a group must exert themselves to help each other."

Mr. Jackman presents a sociological problem that thinking teachers must face when he says: "The problem of grading and grouping of pupils will be solved when the children are permitted to plan work for themselves that demands co-operation." To achieve an ideal humanity there must be co-operation. "The future belongs to co-operation, or, if it is preferred, to the rivalry in social service. Co-operation means co-working; co-working develops community of feeling, which is sympathy, and sympathy is the basis of love." The knowledge of the school must be given a social value. The individual cannot live to himself alone.

The individual, the social unit, must be strong, if the whole is to be strong. It is through his rights that he learns there are duties connected with rights. The group idea carries out the social ideal. Mr. Scott advocates allowing the children some

freedom in forming the groups. The strong and weak intellectually would in this way be brought together and help each other. The children would naturally group themselves according to liking for hand-work or by a natural sympathy. Mr. Search in *An Ideal School* shows how varied are the capabilities in an ordinary grade, and in his school each individual would do what he can and not be hindered by others. Every child should be placed where he is the happiest. Mr. Search gives every consideration to health, which he thinks of first importance in his plan for an ideal school. He does not emphasize the social ideal as does Mr. Henderson in his *Education and the Larger Life.* Perhaps there are in this work some ideas which may be laughed at, but there are many more which are inspiring and suggestive in the search for what is best in educational ideals.

In the School of Education the group idea is carried out especially well in the morning exercises and in the parties which are given to one room by another. There is co-operation, co-working, and sympathy. There is great incentive and help in carrying out all plans of the school in the co-operation and sympathy of the parents, many of whom are frequent visitors. In Pestalozzi-Froebel Haus children from the different grades are gathered together for the study of pictures. This grouping is to stimulate that of the family. The social idea is carried all through the Haus, each grade assisting another in some way.

It is essential for this change in grading that there be not only those who believe it to be wise, but also those who can effect it in the school. Teachers go into the schools to teach children —not reading, writing, and arithmetic. Perhaps more attention given to how to learn rather than how to teach would bring about the desired results. President Hadley thinks that more attention should be given to the mental types of pupils. There is the literary, the scientific, and the administrative type of mind. The teacher should realize that the scientific mind takes up every subject from the standpoint of the scientific investigator; the other types form the administrative and literary point of view. The recognition of these types will enable the teacher to understand and meet the needs of her pupils.

The pupils are to be guided into the life of moral freedom. Should not the one who guides have achieved this freedom? What is there in the good, the uplifting, the right to put into the mind to give it control? By moral freedom is meant complete control by ideas of right. This is an inner, not an outer thing. "Ye shall know the truth and truth shall make you free."

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APPLIED ART IN THE FRANCIS W. PARKER SCHOOL

In carrying on the hand-work in the Francis W. Parker School the ideal held is that of allowing the pupil freedom of choice in those articles which he makes for his home or for himself, instead of requiring him to make a prearranged set of models. His only limitations in his work are those fixed by his individual power and skill, as estimated by the teacher. To follow such a plan successfully, it is essential to have for suggestion a large number of examples of work involving the various typical processes of the crafts.

The somewhat fragmentary articles which follow are presented with the idea of making a few suggestions for hand-work which this school has found practicable in the various grades indicated.

Because work of this nature is comparatively untried in the elementary schools, it is thought that such detailed descriptions as are here given may prove valuable to other schools making similar experiments.

APPLIED DESIGN

KATHERINE CLEMENTS

The various crafts in the school—wood-work, copper, clay-modeling, textiles, and bookbinding—present a constant demand or motive for the study of design. The children work eagerly, applying original designs to the material as soon as they are able to produce anything worthy. This work develops to the utmost the child's creative ability and imagination, in terms of shapes, and cultivates the taste and skill in choice and arrangement of these shapes in beautiful relations. The children used *given* units first, the problem being to arrange these units in a beautiful design, in a given space; for example, a square, suitable for a tile. The units were: See Fig. 1.

The children used these to make original designs under the following regulations: Each form must be used at least once; the size of units may be changed, but not the shapes; each unit may be repeated as many times as desirable.

It was exceedingly difficult for some of the children to think in terms of forms of this kind, and most of them had to make several designs before they could produce anything satisfactory.

Figs. 1–5 show some of the results of this work.

Then more difficult groups of units were given, some of the results being shown in Figs. 6 and 7. These were used with much more ease, and some interesting designs were made. One student used a design made from these units to decorate a desk set (see Fig. 8). The set consisted of ink-well, stamp-box, and pen-tray, and each was ornamented with a design. (See full illustration and description of desk set under "Clay-Modeling.")

After the children had worked sufficiently with given units to enable them to think in terms of this kind, they were given vegetables, fruits, and flowers, which they cut into sections, and from these they found units for themselves. The vegetables, fruits, and flowers used most satisfactory were the tomato, carrot, lemon, apple, trillium, and wild carrot blossom. (See Figs. 9 and 10.)

A design (see Fig. 11) made by a boy in the tenth grade from tomato units was applied to a decoration or design for a handle for a table drawer, which he was making in the shop.

Having the knowledge of many shapes and the ability to see shapes in everyday, familiar things, the children can now work with simple curved and straight lines, arranging them in a given or chosen space; e. g., a square which is divided into four equal parts. These lines, when combined, make shapes that are interesting or commonplace, beautiful or ugly. The ability to arrange lines in beautiful and refined relations demands the best individual thought and skill, and the possibilities of beauty of arrangement of lines are unlimited.

The children wished to design pillow-cushions, etc., for Christmas gifts, and one group of children planned to furnish the rest-room with pillows and draperies, appropriately decorated.

Successful designs were chosen and carved on wood blocks, and these blocks were used to print the design on the textiles. Blocks of white pine were used of the desired size, two or three inches square, and about two inches thick. Soft wood was used because it could be carved with sloyd knives at the desks in the classroom. There are many disadvantages in using soft wood, great care being necessary not to split the wood. Hard wood is much to be preferred if tools and the shop bench are available. A large, well-padded board is necessary to stretch the cloth over before printing, and another smaller pad, covered with felt or cheesecloth, for the color. The color must be thoroughly mixed with turpentine. Oil paints are most satisfactory and convenient to use, and wash well in tepid water and soap if handled carefully. Dyes can be used, but must be mixed with a paste (any starch or library paste will answer this purpose). When two or more colors are to be used, as many blocks must be carved as there are colors; or, if one block is used, the colors must be painted on the parts of the design with a brush, before each print is made. (See Figs. 12 and 13.)

METAL-WORK

GRACE K. DEWEY

Metal-work has been attempted at this school, up to the present time, only in grades above the fifth. Even in the sixth a comparatively small amount has been done.

There is perhaps a fair question as to whether work of this kind cannot be done by still younger children, but it has been the general experience of the school that work of the character described here—the shaping of small bowls and trays, and the decoration by raising and etching—may be begun more successfully in the seventh grade than with younger children.

The description which follows tells, somewhat in detail, of the methods employed in making a few articles which are fairly typical of many of the things made.

To avoid the danger of discouragement at the outset of the work, beginners are usually permitted to make only the most

simple articles, such as ash-trays, pin-trays, and plates of various sizes and shapes. (See Fig. 14.)

The metal most used has been copper, though a few pieces have been made of brass, and a few of a combination of both.

In planning an article, its construction is carefully considered; also the best materials for it, its proportions, the design for its decoration, and the tools which will be required in its making.

Working-drawings are then made, including the decorative design, special attention being given in the latter to proportions and space relations.

In every case where it has been practicable, especially with the younger children, wooden blocks and wooden hammers have been used in preference to the metal tools. This has been done because with the wooden tools the children are less likely to make ruinous dents in their work; because the metal hardens less quickly in the working, and so needs annealing less often; and because the pupils themselves can make much of their own apparatus.

The oblong trays (see Fig. 14) were shaped by hammering with a wooden mallet from the outside over a wooden block having a curved edge corresponding to the curve at which the piece was to be turned up.

The plates were fashioned by hammering from the face side on a wooden L-shaped block with metal hammers. Wooden mallets were used to flatten the flange and bottom of the plates.

The metal becomes hard after being beaten for a time, and must be annealed by heating to a bright red and cooling suddenly in water, after which it is as soft as at first.

The trays and plates are usually decorated, either on the flange or in the bottom.

If the design is to be etched, in the bottom of the tray, for example, it is first carefully drawn in pencil, then the raised portion of the design is painted with asphaltum paint. This must be most carefully done, as the paint is apt to spread over the line of design, and when etched leaves a ragged edge instead of a good, clear line. When the paint is dry, diluted nitric acid is used to eat away the background. When the acid has eaten deep enough,

the paint can be removed with turpentine, and the metal cleaned and polished with powdered pumice stone and oil, and afterward with powdered rouge. The tray can then be colored either by acids or heat, or it may be left to oxdize naturally.

If the pattern is to be embossed on the tray, a pitch block is used. This is made by melting together equal parts, by weight, of black pitch and plaster of Paris with a small lump of mutton tallow, the mixture being poured into a wooden bowl while liquid. The tray is placed on the pitch block while it is hot, but the pitch must be allowed to cool before work is begun.

One of the simplest forms of embossing is done by using nails or blanks, each one filed to fit a unit of the design. These forms would necessarily be limited to such simple figures as rectangles of varying proportions, elipses, circles, etc. The tool is used like a die, being held in the proper place in the design and struck so as to make but a single impression of itself. Many attractive and original patterns can be made in this way, and it has the added advantage of being within the power of the sixth- and seventh-grade pupils, while the embossing done with tracers and punches requires greater control and care than children of these grades are apt to possess.

A number of pieces, such as match-safes, ink-stands, lamps (both base and shade), candlesticks, and shades, have been made by riveting the parts together. This is usual where the article is bounded by plane faces or is of cylindrical or conical form. The candlestick (see Fig. 14) is composed of three pieces. The round dish has the edge turned up to half an inch in height. This was done on a wooden block with an oval-faced metal hammer, from the inside of the dish.

The candle-holder was cut out of a single piece of copper of somewhat lighter weight than the dish, and when flat was shaped like a cross. After filing, it was riveted to the center of the dish, and then the four arms of which it was composed were bent into position. The handle was next cut out, shaped and filed, then riveted onto the bottom and rim of the dish.

Some of the older pupils have made watch-fobs and belt-clasps (see Figs. 15–17). Fig. 15 shows a sketch of one of the

FIG. 1

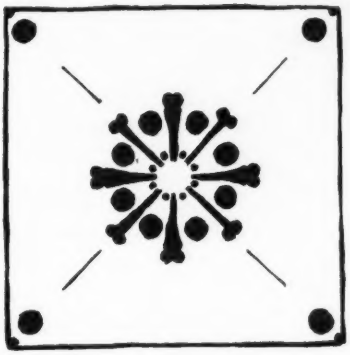

FIG. 2

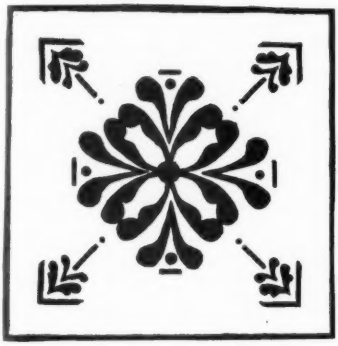

FIG. 3

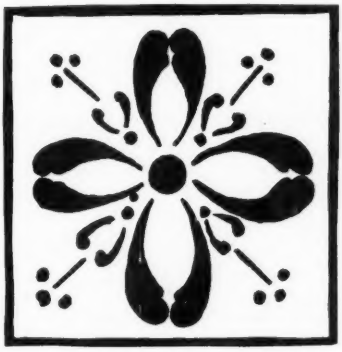

FIG. 4

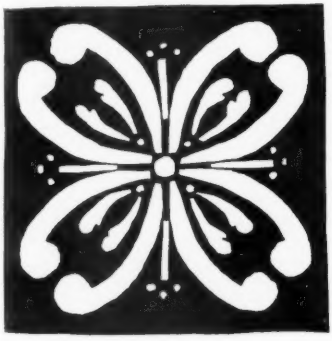

FIG. 5

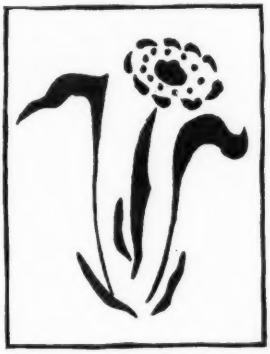

FIG. 6

FIG. 7

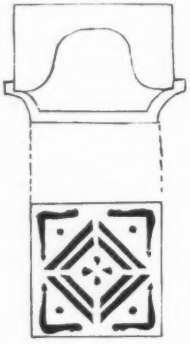

FIG. 8

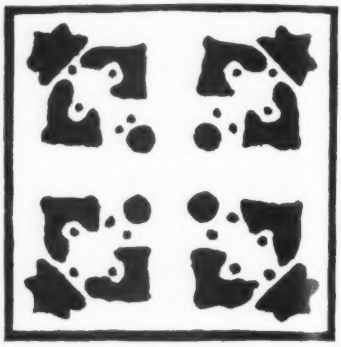

FIG. 9

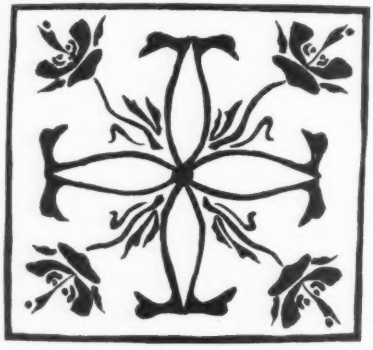

FIG. 10.—Wild Carrot Unit

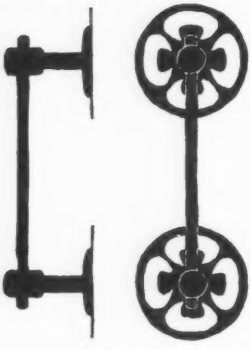

FIG. 11

FIG. 12

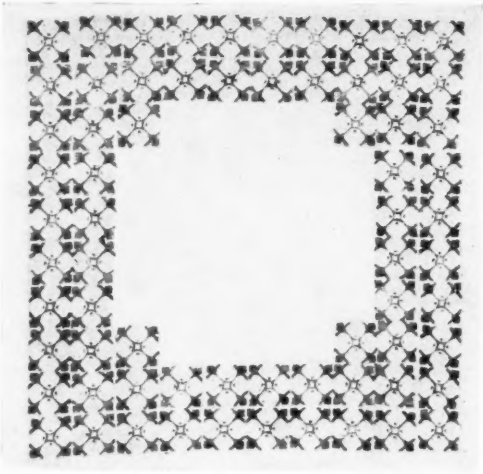

FIG. 13

FIG. 14

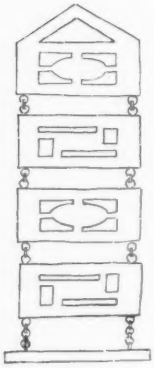

FIG. 15.—Watch Fob

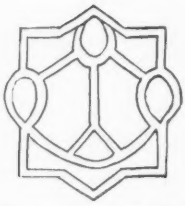

FIG. 17.—Belt Buckle

FIG. 18.—Winnowing Wheat
2d Grade

FIG. 16.—Belt Buckle

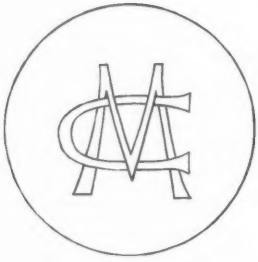

FIG. 19.—Inlaid Tile
4th Grade

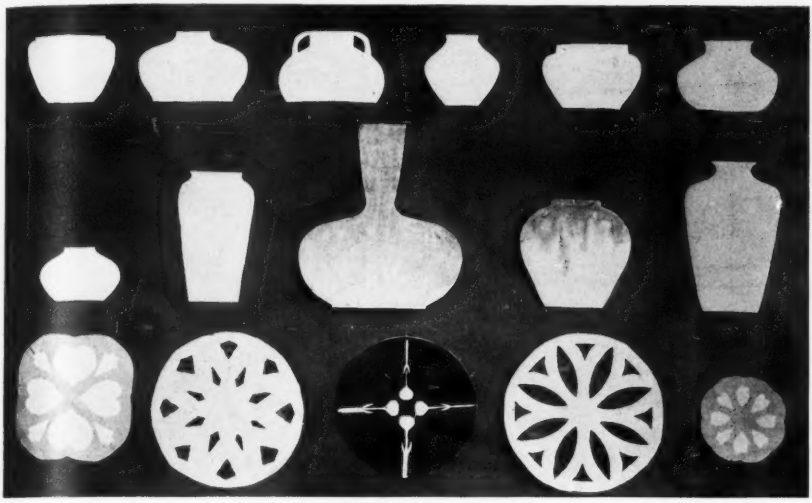

FIG. 20.—Designs for Inlaid Tiles
5th Grade

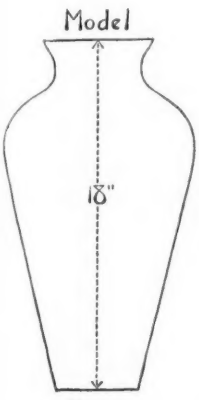

FIG. 21

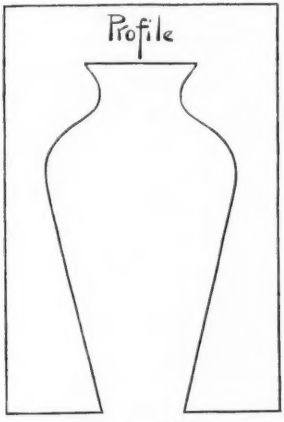

FIG. 21.—Vase

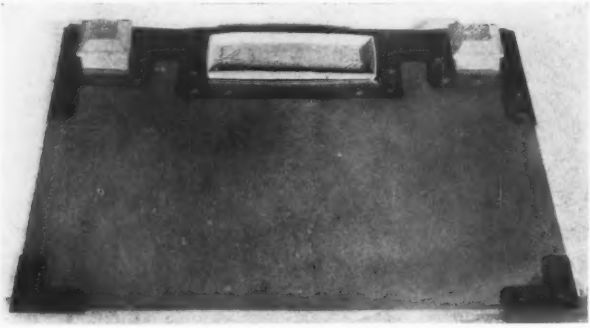

FIG. 22.—Desk Set
9th Grade

FIG. 23.—Pottery for Christmas Gifts
3d to 11th Grade

fobs. This was composed of four pieces linked together. These pieces were one and three-eighths inches long, and five-eighths of an inch wide. The squares and oblongs were cut through with a fine jeweler's saw, after which the edges were filed smooth. The little rings to link the pieces together were then soldered on.

An enameled belt-buckle (see Fig. 16) was made in this manner. A piece of copper, larger than the buckle was to be, was put on the pitch block, which had been heated by the blow-pipe. The design was then transferred to the copper. A piece of steel blank was filed into a tracing-tool, and with this and a chaser's hammer the outline of the design was traced. Other tools were then made and used to push down the background. The copper was then taken from the block, annealed, and cleaned. The pitch was again heated, and this time the copper was put on face down, so that the part to be raised could be pushed up with rounded tools.

This process was repeated several times, first working from the face and then the back, until the design was as perfect as the pupil could make it.

Each time the buckle was taken from the pitch block the copper was annealed and cleaned before again putting it on the block. After the buckle was sawed out and filed, the back was put on. The completed front piece was clamped to a clean piece of flat copper. A wash of borax was painted around the joint as a flux, and little pieces of silver solder put near together around the joint. The blow-pipe was turned on, gently at first, from underneath, then on top with good force, until the solder flowed into the joint.

The enamels selected were green and blue. They were first ground separately in small mortars. When fine as sand, they were washed with clear water to take away dust or other impurities. The enamels were then put into the depressions of the design, and when they were dry the buckle was placed so that the heat from the blow-pipe would come underneath it. After the enamel was fused, the buckle was allowed to cool gradually.

When the enameling was finished, the back piece was sawed close to the joint, and filed until smooth and round. Then the

buckle was cleaned and polished, and the clasp and loop were soldered to the back with soft solder.

CLAY-MODELING

HELEN PUTNAM

The following statements written by the children, tell something of what is being done in clay-work in the school. It is customary for the various classes to report from time to time to the whole school at the morning exercises about their work, and the accounts are reproduced here as nearly as possible as they were given at such times.

We were studying about threshing grain, so we thought that it would be nice if we should make models of clay for the second grade next year. The first thing I did was to make a tile of clay. Then I had to draw men pitching up wheat with forks to winnow it. When the men toss the grain up the wheat falls down; but the chaff blows away. After I got through drawing, I built on some more clay where my drawing was, to make the men stand out. I made the arm of the man highest because it was nearest to me, and the other parts that were further away I made lower. After we get through modeling, our tiles will be baked in the kiln, but not glazed. (See Fig. 18.)

A. H., Second Grade.

This is how I made my inlaid tile. First I made the tile. Then I drew the letters on it, and as soon as I got them to my liking I dug them out ⅛ of an inch deep.

Then I ground, sifted, and weighed the colors I wished to inlay. These colors were red and blue. For the red I used 10 grams of red under-glaze color and 20 grams of common clay. For the blue I mixed 7 grams of blue under-glaze color, 2 grams of green under-glaze color, and 35 grams of common clay. I ground them in a mortar, with water, and poured them out on a plaster tile to dry till they were no longer sticky.

Then I put them in the spaces I had dug out, using the red for the M and the blue for the C. When the letters were all filled in, I let the tile get almost dry, and then scraped it with a knife to make it even all over. Then it was ready for firing. (See Fig. 19.)

W. B. B., Fourth Grade.

Last year in the fourth and fifth grades we made our designs for pottery work by folding and cutting papers. The fourth grade made designs for jars or bowls, and they were limited to 5 inches in diameter and 3 inches in height. The upper row of patterns (Fig. 20) shows their work. Of course, they did not have as much variety as the fifth grade, who were allowed almost any

size they wanted, but it was very surprising to see how many shapes they could get within those dimensions.

The fifth grade took pieces of manila paper and folded them in half; then they cut one side of the shape wanted. When they opened the paper, they had both sides symmetrical. A good many of us wanted drip glaze, and we had several different ways of representing it in our patterns. One way was to cut a piece of paper the shape of the drips, painting it the color we wished. Another way was to saturate the jar pattern with water, then paint it over the top with the drip color, letting this run down. This made a more satisfactory effect than the other. The second row shows these patterns.

The bottom row shows the way we made designs for inlaid tile. First we cut a piece of paper into a square or circle, according to the design we had in mind. Then we folded it into halves, then fourths, then eighths (or halves and sixths if our design called for that), with the folds always radiating from the center. Next we cut out different figures from the folded papers, and then opened them out to see the whole design. It was lots of fun, because we never knew just what was going to come out. We mounted these patterns on colored paper, the openings showing the places where the colored clay was to be. (See Fig. 20.)

D. P., Sixth Grade.

I began my desk set (see Fig. 22) by making drawings for the intended ink-well, stamp-box, and pen-tray. Then, from a few units, given me for use in the drawing class, I composed a design, and adapted it to the set. (See Fig. 8 under "Design.") Then I made the drawing of the copper corners and stand for the set. The ink-well, stamp-box, and tray are made of clay. The ink-well was modeled of a block of clay, and the well hollowed out. The stamp-box is of the same dimensions, but the sides were cut out of a slab of clay and welded on, instead of being modeled on.

The covers of the ink-well and the stamp-box are uniform, and are made with a rim at the edge, so as to fit onto the box and well.

The design on the sides of the ink-well, stamp-box, and tray was indented with a small tool. The design on the covers and the bottom of the tray was dug out.

The copper stand and corners were cut out according to design, and openings were left in which to place the various parts of the set.

The design on the copper consisted merely of dots in relief, made by hammering from the under side. Then the rough edges were filed off and the stains rubbed off with diluted sulphuric acid.

The blotting-pad is made of heavy tar-board, upon which I laid the blotter. Over these I slipped the metal parts, and then set the pottery pieces in place. (See Fig. 22.)

T. M., Ninth Grade.

Fig. 23 shows pottery made for Christmas presents by children from third to eleventh grades.

TRAINING IN GEOGRAPHY

F. P. GULLIVER

Geography has been taught for many years as an informational subject. Masses of facts are given, many of them undigested, and often these facts have no systematic relation to each other as they are given to the pupils to remember. Memory is made an all-important factor by this method of teaching the subject, and it is an undoubted fact that the memorizing of a mass of disconnected material is one of the most difficult accomplishments for the human mind, and one which is practically useless from an educational point of view. Most of the facts so learned are retained in the mind but a short time and are easily forgotten. This leads to the method of cramming for examination, which is always to be deplored.

Systematic training in the science of geography has demanded a good deal of attention during the past few years, and it is to this subject that attention is called in the following paper. The history of the development of systematic geography from the early work of Ritter and von Humboldt will not be discussed, but, assuming the fact that geography may now be considered a distinct branch of science, some of the more recent methods of teaching this important subject will be described and discussed as a valuable means of training the minds of pupils.

No one will doubt that every educated man should know a certain number of the important facts in regard to the geography of the world in which he lives, and of which he is a part. The relation of man to his surroundings is too important a subject to be lightly passed over in this age of great commercial enterprise. The boys of today will have to be the leaders of the world tomorrow. No one can successfully cope with the world-problems of trade and commerce unless he has some knowledge of the various portions of the world in which he is to become an important factor.

The difficulty lies in knowing just how to obtain this knowledge of the great world outside of one's own little sphere of activity. The ideal way, of course, would be to travel to all parts of the world, and see as minutely as one can the surroundings of other people in other climes; but, of course, this is possible for only a very few of us. The time necessary to obtain even a fairly accurate knowledge of the one hundred square miles immediately surrounding one's home makes it absolutely prohibitive to study the geography of the world by this ideal method. It is astonishing to find how few people have any adequate conception of even twenty-five square miles of territory immediately surrounding their home.

The method used, therefore, in systematic geography must be such that, with a minimum amount of actual travel, rational and intelligent ideas may be obtained of parts of the world which cannot be visited in person. Books of travel well written have always been interesting to boys, and it is undoubtedly true that a great deal of information in regard to other parts of the world comes from such books. The writer firmly believes that many more such books of travel, written particularly for young readers, will be of the greatest value as aids in the teaching of geography. This, however, is work which should be done outside of the class, as illustrative of class work rather than as the basis of systematic geography. The short stories written for children, such as have appeared in the last few years in the *St. Nicholas, Youth's Companion,* and other well-written papers for children, stimulate in the very young the thirst for more knowledge in regard to distant regions. These truthful stories of differing conditions have very wisely taken the place of the fantastic tales which used to be told in regard to monsters, goblins, and extinct animals. What is wanted is actual knowledge of the present conditions in the world in which the boy is to live.

There is very wide acceptance of the idea that the point to begin the teaching of geography is the home and its surroundings, the school, the school-yard, and the village, city, town, and country in which the pupils reside. Home geography

then should undoubtedly be the starting-point for systematic training in geography. The great difficulty in the carrying out of this idea is the fact that no textbook is available for every school. In fact, no publisher would consider the idea of making a separate textbook for each town. In a few of the great centers of population this has been attempted; and, as far as the result of only a few years of application of this method warrant an opinion, it is undoubtedly true that this method has met with very great success.

A greater difficulty than the textbook is the teacher. Very few teachers are properly prepared to instruct their pupils in regard to home surroundings. The teachers themselves do not know the home in which they live; this is a strange fact, but very true. A good teacher, in sympathy with the surroundings of the home and school, can develop a great deal of interest among the pupils in home geography. Teachers are too often afraid to rely entirely on themselves, and hesitate to start out as explorers with the class in the immediate vicinity of the school.

Principals and superintendents also are not alive to the real situation in this matter. They know that the teacher is untrained, and they fear the criticism of parents that "time is wasted when not spent looking at a book." The fact, however, remains that time is not wasted by out-of-door work, even if imperfectly done. It is far better to get a fair knowledge of one's surroundings on this earth than to have no knowledge whatever of one's surroundings. Observational knowledge remains in the mind much more tenaciously than facts learned from a book, and if the facts learned about the home are so learned that they lead the mind into the greater affairs of the state, the country, and the world, it will be of infinitely greater value to the pupils individually, as well as to the state, the country, and the world in which these pupils live.

By a study of any industry located at home, a knowledge of that industry, as carried on in other parts of the world, may be rationally and easily obtained. This study of some special branch of agriculture or manufacture leads to the wider study

of commerce. The commercial relations of the world depend on the facts of home geography in a great number of points. It is along these lines of commercial enterprise that the life-blood of the world flows. Until some reasonably accurate idea is obtained of the industries immediately surrounding one's home, it is practically impossible to give pupils any adequate conception of the great world-industries, of which his home industry is simply one small part.

Geography deals with many of the complex interrelations between man and the plants and animals which surround him. It is therefore important that he should study first the plants and animals surrounding him, before he can understand the great trade of the world in cotton and leather. A fairly accurate knowledge of the growth of the plants which surround him will enable the boy to form come rational conception of the growth of other plants in other parts of the world, which have an important relation to the life of man on the earth. A study of the habits and characteristics of the animals in any region will in a similar way enable the boy to conceive, in a fairly accurate way, the great facts in regard to many animals in different parts of the world, upon whose existence and developmen man so largely depends.

It may be safely said, therefore, that systematic training in geography should begin with the home surroundings; that a knowledge of the relative location of the home to the school, the school to the village, the village to the city, the railroad connections of county and state, leads to the state capital, to the state metropolis, and should lead later to a knowledge of the other states, and finally to the other countries of the world. The next step should be a study of the plants and animals surrounding the school, in order that the pupils may have a clear understanding of the great facts of animal and plant life which so closely affect the position of man on this globe.

No one will be bold enough to say that every school should take up systematic geography in exactly the same way. So much depends upon the locality, and so much on the individuality of the teacher, and upon the interest of both teacher and pupils,

that the best scheme for each individual school must necessarily differ from the best scheme for other schools. There are, however, many important principles which should be studied in every school, and a textbook based on these general principles, written so as to stimulate observation rather than memory, may be so constructed that it will be of service for schools in very widely differing localities. It must emphasize those facts of local geography which are characteristic of the greatest number of regions. These exercises must, of course, be supplemented in each individual locality by the facts which appeal most to the interests of the pupils and the teacher.

Such a book should contain exercises based on the common animals and plants which occur in the greatest number of localities. When an exercise cannot be used in a given locality, another more suited to that individual school should be substituted in its place. Thus, after a few years of work in any given locality, a teacher will find those subjects which best stimulate the observational faculty of each pupil. The textbook will not be used as a cast-iron structure from which no deviation can be made, but will become an elastic structure which will simply guide the minds of teacher and pupils into the lines of thought best calculated to give the pupils such an idea of the immediate surroundings that they may then safely extend their conception to more distant regions.

For example, the study of meridians—that difficult stumbling-block for so many pupils—should begin with the idea of the shadows at noon of various objects. These shadows form the mid-day line for the school. Let this idea of mid-day line be extended until its significance is perfectly clear. At 12 o'clock the shadow of a pole forms the mid-day line for the school. Extend this mid-day line both north and south. When this conception is perfectly clear, introduce the idea that by following this mid-day line north and south the north pole and the south pole will be reached. Then state the fact that this is the meridian line of the school.

By the use of a small globe it will then be very easy to pass to the idea of the meridians of other places, and the false idea

often obtained that meridians are only imaginary lines, drawn at stated intervals east and west from Greenwich, will never enter the minds of the pupils. Mid-day lines are everywhere. Meridians in the same way pass through all points on the face of the earth. Their real character is thus firmly established in the minds of the pupils, and the mathematical fact that lines may be imagined between any two points does not enter into the conception at all. An actual meridian line should be drawn on the schoolroom floor or in the school-yard, from which pupils may take their first conception of a map.

Map-drawing and map-construction should be among the earliest ideas introduced to pupils. Before maps of the county, state, country, and world are introduced, pupils should know from actual experience what a map is. Make a map first of what may be seen—the schoolroom, the school-yard, or the village. Let this map be constructed on different scales, so that pupils may realize what the change of scale means—the representation on a small area of a greater area. One of the commonest sources of misconception in geography is the lack of appreciation of what a map really represents.

When pupils thoroughly understand the meridian and the school map, the idea of representing a larger area should be introduced. This may be called *a route map*. The class should cover an area so large that it cannot all be seen from one point. A compass may be used to give direction; pacing, revolutions of a wheel, or time taken on a trolley trip may be used for distance. The route followed on the trip should then be represented on different scales. More than one such route map will have to be made before all the class gets a correct idea of what a map really means.

When the making of such a route map is impracticable, a very good substitute is to take the courses followed by different pupils from their homes in different parts of the town to the school. When each one has made a map of his daily walk to and from school, these lines may be put together on the blackboard by the teacher or pupils, and the map of the village is thus easily obtained. The school in this map may be represented

by a dot, while in the first map constructed it is represented by four lines surrounding the space which represents the interior of the school building. Only after these conceptions are fully fixed in the minds of the pupils is it safe to introduce a map which represents the village as a dot, with roads and railroads connecting surrounding towns, also represented by dots.

Along with the development of the idea of local geography a knowledge of what a village contains should be obtained by the pupils. The writer firmly believes that it is the wisest plan to introduce with this study of locational geography a knowledge of what makes up a town—its people, business, manufactures, its railroads, its steamship lines—as well as the plants and animals which inhabit the region.

Geography truly includes the elements of various sciences. If the elements of the various branches of science are introduced at this early period as a part of the teaching of geography, the pupils gain a better conception of what geography really is, and at the same time get a conception of what the other sciences treat. If the facts thus taught are wisely selected, geography will not become a mass of disconnected facts, but will be a natural foundation for scientific training, and a stepping-stone to the later study of the details of these other sciences.

ART AS RELATED TO MANUAL TRAINING[1]

JAMES EDWIN ADDICOTT
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It is my purpose to make clear two points: First, that art and manual training, as expressed in private, municipal, and national life, are one and inseparable, and consequently should be so presented in the industrial-arts courses for our public schools. Second, I shall attempt to show specifically what phases of art and manual training may be correlated naturally and advantageously.

This paper assumes that both art and manual training constitute essential branches in the courses of study of our elementary and secondary schools. The direct question before us is: Are they distinct branches having few common points of contact, or are they fundamentally related?

The answer cannot be safely settled by refering to texts on the subject; neither should opinions of successful teachers of the individual subjects be wholly relied upon, unless perchance they aim far beyond the technique and organization of school work. Rather let us look out broadly upon the necessities of the industrial world, and feel the pulsing needs of American institutional life, if we would answer the question rationally.

To be more specific, it must be admitted that, on the one hand, there may be a few individualistic artists whose work is so highly specialized as to be wholly unrelated to structural elements; and, on the other hand, there may be mechanics whose work does not, and need not, partake of any artistic feeling. It seems to me, however, that such specialists have no more right to expect that a technical preparation for their callings be given in the elementary schools than the lawyer has to expect a training sufficient to plead a case of criminality in the courts, or the surgeon that all pupils be qualified to treat a case of appendicitis, or the clergyman to request that each child be able to expound the doctrine of the Trinity.

[1] Read before the Department of Superintendence of the National Educational Association, Louisville, Ky., March 1, 1906.

In the past the manual-training movement in this country emphasized highly specialized technical and accuracy features as essential elements of a preparation for a few specific forms of handicraft. Likewise much of art in the schools has been and still is a series of drawings arranged in such sequence as eventually, after many years of effort, to prepare the pupil for some specific phase of so-called "refined art." The teacher who hopes to guide educational thought today must feel the relation of his specific branch to the world's work. Admitting the narrow specializing aims of art and manual training in the past, it is but just to say that they approached the educational idea as closely as other school branches; for we not only claimed, and could prove by the theories of the pioneer psychologists, that manual training and art trained all the faculties at one sweep, but we also invented some new, artistic, and mechanical faculties which were developed simultaneously with the commonly accepted list.

With such narrow and undemocratic ideals, and with such an inadequate theory of the aim of education, it was impossible fully to comprehend the fundamental relations which naturally combined the arts and crafts into a broad, unifying, educational movement.

Today the educational ideal has shifted. We look not so much to textbooks, not to the teacher, not to the rich heritage of the past; rather, we look out broadly upon the many needs of society, and to the great industrial and commercial enterprises, if we would know just what is best to teach.

The thoughts contained in texts, the ideas of the pedagogue, and the ideals of past generations are to be accepted only as they serve to fulfil society's present plans for physical, intellectual, and religious attainments and needs.

From this broad social standpoint let us first consider the arts, then the crafts, and then their union as expressed in private and public needs; and lastly the relations of the two in school as a preparation for, and as participation in, this private and public life.

In the past there has been an almost superstitious reverence for the highly specialized talents of the artist. Someone has described the artist as "heaven-taught;" for it is he that has led us to see and appreciate the beauties of ocean, of mountain, and of God's grandest works.

When the artist really does lead us through his work to a nearer

view, and a higher appreciation of the exquisite harmonies and beauties of nature, his work may indeed be styled heaven-taught, and even heavenly; and he may be given credit for living up to his highest religious and educational ideals. Too often, however, we see the painter of the picture glorified, rather than the works of the Creator which inspired the artist and thus made the painting possible. We have a suggestion here of the true nature and mission of art. Art fulfils its highest mission only when it leads us to a higher appreciation of the beauties of nature, whether they be inanimate, animate, or human. A taste for things beautiful in nature, a refined and delicate feeling of pleasure in the sunset, the woods, the mountain streams, and a sympathy for nature's creatures, are among the highest ideals of art instruction.

When fine art becomes separated from all other arts, when fine art ceases to be an integral part of the thoughts, actions, and inner being of the individual, its grace, charm, and effectiveness are lost.

Instruction in fine arts is the creation of an atmosphere in which the student breathes, moves, and performs every detail of his life's work. Fine art should affect our taste for nature, for literature, for music, for high companionship, and, in fact, for everything that may be made lovely and holy.

Art is not a subject to be isolated from all other subjects, and then subdivided into its various parts for special study and arrangement; but rather a charming appreciation of all things beautiful, at all times, and in all places. Consider for a moment the broad influence of art in the modern home. Notice the simplicity of lines in the woodwork and furniture; notice the color scheme of carpets, rugs, tapestry, wall-paper, and decorations. While there are many things in one room, the harmonious blending of colors and of simple decorations impresses one with a unity and simplicity that are exquisitely pleasurable. The darker tones of the floor gradually lighten to the soft tints of the ceiling, producing a quietude in the individual similar to that felt when nature supplies the restful dark green beneath, the woods and mountains in the background, and the light-blue sky above.

An attempt to separate clearly the arts from the crafts in such a home would mean annihilation to both. Without the delicate artistic touches to the structural and ornamental elements, there would be

little need or appreciation for much of the craftsman's work. Reciprocally, without the constructions of manufacturer and craftsman, how and where may the artist express his feelings or display his talents?

The union of arts and crafts is displayed in every department of a modern home; from the drawing-room to the kitchen, the principles of harmony, simplicity, and beauty are expressed by the correlated work of the artist and the artisan.

This correlation is strikingly manifested also in private, municipal, and national enterprises, though what has been accomplished is a very small part of what is to be. Elaborate preparations are on foot in many of our cities to adopt a style of architecture adapted to the climate and most fitting the natural environment; also to give such cities an arrangement of public buildings that will add architectural beauty, and at the same time suit the convenience of the public. The conception of artistic civic centers, with landscape gardening, boulevards, and parks, is growing in popularity every day, and evidences in a profound way the increasing public demand and appreciation for the union of arts and handicrafts. In many of our American cities the union of the beautiful and the useful is being expressed in every detail coming under municipal control. We find artistic feeling expressed even in the poles and fixtures for electric and gas lights, in billboards, shop fronts, fire-alarm boxes, plates naming the streets, letter-boxes, electric-light signs, pavements, fountains, monuments, and the arrangement of steps, flowers, shrubs, trees, and lawns.

Striking examples of this harmonious blending of the arts and crafts may be found in public buildings, such as the Boston Public Library and the Southern Pacific Railroad Depot at San Antonio, Tex. The latter has an entrancing architectural charm, and seems to bespeak the climate, history, and character of the Texan people. The simplicity, beauty, and unity expressed by the Boston Public Library are beyond description. One can simply breathe the atmosphere and receive the inspirations. Every minute spent within its walls only enhances the ennobling influences which administer to the spiritual emotion.

In government buildings, such as the Congressional Library and the new San Francisco Post-Office, we see indications of a growing national desire for the correlation of hand crafts and arts. Though

these national buildings may not fully satisfy our ideals for unity and simplicity, nevertheless, when viewing them, the æsthetic element dominates ones feelings.

At the Louisiana Exposition much of the so-called arts and crafts was exhibited in the Palace of Fine Arts. Porcelain, glass and metal-work, textiles, and household furnishings were awarded honors and prizes on equal terms with paintings and sculpture. It is gratifying to note this national approval of the art-craft movement. It would seem in place not to ask the following questions: Should teachers of art or of manual training ignore the official position of the government in this matter? Should they ignore the desires and needs of society? Should art be taught largely for art's sake, and manual training largely for the sake of manual training; or should they both be taught wholly for the pupil's sake, and for the sake of society which we serve?

It is unfortunate that teachers of art and manual training have been slow to recognize each other's virtues; for the work of either is essential to the welfare of the other. If the fault lies unevenly, it would seem to rest on the side of those who are mechanically inclined. The all-important thing at present is to harmonize these elements, and thus secure a reciprocal influence between art and construction. The most useful things are artistic, and the most artistic things are in the highest sense useful.

The artistic project is becoming the ideal of the artisan, while usefulness and fitness are being recognized by artists as concomitants of the beautiful. This meeting upon common ground of art and industry is due in no small measure to our changed and changing notions of education, thoroughness, and specialization. The specialist of today is not that person who knows one thing and only one thing, but rather that person who knows one thing in relation to all other things to which it is in some way related.

There is no adverse criticism of the artist who wishes to make a shelf or plant and care for a flower garden; on the contrary, we credit him with being an artist of the broader sort. The artisan in the same way is considered a more proficient man if he gives a touch of beauty to the form and color of his work.

The present tendency to introduce art and manual training into the already crowded curriculum of our public schools is due to this

broader view of education, thoroughness, and culture. Both these subjects touch in a vital way the very heart-strings of every boy, girl, man, and woman. Each of these branches is related in some way to every other subject in the curriculum, and by denying either of them a place in the course of study we only weaken that course, and consequently the pupil; for we are thereby cutting off the full supply of experience which give life and motive to the thoughts and actions of normal children.

The school-teacher who objects to art and manual training, on the ground that there is not even time to teach reading, writing, and arithmetic thoroughly, is like the farmer who spent all his time plowing, harrowing, irrigating, and fertilizing; but, as he never found time to do these things thoroughly and perfectly, he therefore objected to planting any seed. This school work that is always *getting ready* for life, and forever says to the child, "Don't touch life till you are thoroughly prepared by studying textbooks," is like the experience of the farmer who refused to plant seeds until the propitious time had passed, or like the boy who was trying to swim before venturing into the water.

I have little patience with that form of education which is based wholly upon a preparation for life. If school work is not life, and life work, it is not worthy the name of education. Education means life. "I have come that ye may have life, and that ye might have it more abundantly." The life of every boy and every girl is an unfolding, a growth, a participation in some form of life's duties; and the process is internal application, not external. We have looked upon the child too much as we should a watch with all its wheels, springs, screws, and cogs, thinking that, as the watch-maker may adjust and lubricate till the perfect timepiece is produced, just so the teacher may force his ideas and impressions upon the child, regardless of the child's aptitudes, previous experiences, or attainments. If this theory were true, we should have found the perfect man long ago. We shall make educational progress faster and more naturally by thinking of the child rather as a plant which does and must develop largely according to its natural inclinations. We can nourish, protect, and guide, but we cannot safely force either the growth of the plant or the development of the child.

As a means of natural unfolding and self-expression we find both

art and manual training to be safe and reliable agents. The correlation of these two subjects is the great need of each. This cannot be done by discussing the relative merits of each, nor by emphasizing the strong characteristic features of one for the benefit of improving the other. What we must do is to seek common ground, and work together along the line of least resistance for common ideals. We have already shown that there are certain fields of educational work, and of industrial enterprises, and of practical, everyday affairs which look to both art and mechanical skill for their highest and richest realization of success. Speaking broadly, we find that even remote and apparently unrelated branches, such as music, poetry, and literature, are dependent in no small way upon fine arts for a full and complete interpretation. The mechanical element, likewise, is necessary for any expression of cadence and rhythm in either poetry or music.

It is in the field of industrial arts that hand skill and fine arts are obviously related and interdependent. In the preparation and serving of foods, in the planning and making of clothing, in the construction of homes, business houses, means of transportation, and in the various other conveniences serving the æsthetic and practical needs of man, we find the common ground referred to, the workable field for both fine arts and manual training.

In considering the various sub-topics coming under the general heading "industrial arts," we find some lines—such as pottery, basketry, and metal-work—lending themselves most naturally to the artistic designer. There are other lines—such as textiles, cardboard, and wood-work, offering many limitations; while still other lines—such as joinery and machine-shop work—admit of every little art expression.

Let us consider what phases of art are best suited to manual-training courses. Both applied design and art interpretations may well serve the manual teacher; for the former deals with the size, form, and color of constructions, and the latter allows a universal application of art principles.

It is evident that other important lines of art—such as a study of pictures, of the life and works of artists, of historical and inspirational masterpieces, as well as the production of pure or modified representation—are less intimately related to structural work.

That branch of art known as "design" seems, then, to be most vitally related to hand-work. Indeed, it is an essential part of that work; for it deals not only with decoration, but also with construction and arrangements of parts. By "design" I mean the "conception and expression of form and color ideas, including all kinds of construction, arrangement, and decoration." The main purposes of design are to secure unity, simplicity, and beauty; the specific principles of balance, rhythm, harmony, variations, etc., are also to be ever kept in mind.

Every design must be influenced by, and must conform to, the ideas of *use* to which the thing is to be put, to the essential structure, to the materials of which it is to be made, and to its surroundings. It is in these last ideas that the artist finds his greatest difficulties, when trying to assist the manual-training work. The art teacher who has never made a basket can hardly be expected to direct the work in designing baskets. The same difficulties arise in designing for sewing, bent-iron work, cabinet-making, or any other line of hand-work.

The question naturally arises: Where may the teacher be found who is at once artist and mechanic? One rarely finds an artist with the accurate training of a mechanic; the artist rather deplores accuracy, as being destructive to art. On the other hand, how few technological students find real pleasure in fine arts; they rather look upon artists as visionary persons, who have a superstitious reverence for beautiful forms and color.

Occasionally we find an artist who sees how art may be applied to the work of securing and making food, clothing, and shelter, in such a way as to administer to the æsthetic feelings as well as to the material comforts of man. Occasionally, too, we see a manual-training teacher taking fine-arts courses, and getting the appreciation and spirit of art, perhaps as a controling influence over all he sees, and hears, and thinks.

While we are expressing our desires and ideals concerning the simultaneous teaching of hand-work and art, the fact still remains that the artist-artisan who is at once an artisan-artist is rarer than the four-leafed clover, I might say, after the frost.

What education wants today are men and women who are well balanced in these two related subjects, who appreciate both, and who can teach both without under- or overestimating either.

The teacher of design should fully understand the limitations of material to be used. Such knowledge is impossible to one who has not had much experience in the manipulation of substances involved in manual-training courses. The teacher of hand-work has the limitations of material well defined; he usually has his ideas of design well defined also; too well, in fact, for the straight edge and compasses are still used at the expense of free-hand designs, and consequently the æsthetic element is not given its rightful place.

It is practically impossible for the art teacher and the manual-training teacher fully to agree upon the design and structure of a given project, and this lack of agreement indicates the desirability of securing a teacher who is well balanced in designing and construction. Such combined qualifications, as has been pointed out before, are rarely found in one teacher. And this indicates the crux of the whole matter. When our training schools and colleges can send out well-balanced teachers of the arts and crafts—teachers who understand both, and teachers who love to teach both—the question before us now will not be a difficult one to solve. This does not mean that teachers without training in each line should be forced to teach both; for if the teacher is an artist, it is futile to try to get an exact balance of the two. If the teacher is a mechanic, the same is true. Let the teacher teach that which he loves, that which he feels and lives in, that which he has the power to enthuse his pupils with, and to give them a thirst for more.

To state briefly our conclusions:

1. Art and manual training are fundamentally related, and should be so considered in elementary and secondary schools.

2. In all lines of industrial arts hand-work and design may be advantageously correlated.

3. The double purpose of this correlation is to elevate and refine the work of the artisan, and at the same time to make the artist's work practical and essential.

4. From the pupil's standpoint, this correlation gives interest, reason, and motive to both art and hand-work.

5. Lastly, the ideal is to make of every teacher artist an artisan-artist, and of every teacher artisan an artist-artisan.

NATIONAL PURITY CONFERENCE

CHICAGO, OCTOBER 9–11, 1906

Arrangements for the National Purity Conference to be held in Chicago, October 9, 10, and 11, have been steadily going forward, and warrant the belief that we are to have very much the best gathering of persons interested in the promotion of purity that has ever been called in our country.

ITS IMPORTANCE

The importance of this conference cannot be overestimated. The time is ripe for united, national effort to be directed against the organized traffic in virtue. Events the past months of even more than usual boldness and flagrance have occurred to give publicity to this organized traffic. There is an interest in the purity movement, awakened, no doubt, by these facts made public, much greater than ever before noticed by our oldest workers. People are looking to us to lead in some united effort which shall bring relief from this awful debauchery of our sons and daughters.

NATIONAL PURITY FEDERATION

This conference is called by, and will be held under the auspices of, the National Purity Federation, which was founded at the National Purity Conference held at La Crosse, Wis., in October, 1905. The officers, executive committee, and object are as follows:

OFFICERS: President, B. S. Steadwell, La Crosse, Wis.; Vice-President, Miss Katharine Bushnell, Oakland, Cal.; Corresponding Secretary, Sidney C. Kendall, Long Beach, Cal.; Recording Secretary, Mrs. Rose Woodallen Chapman, Brooklyn; Treasurer, Dr. Carolyn Geisel, Battle Creek, Mich.

EXECUTIVE COMMITTEE: Mr. Anthony Comstock, New York City; Dr. Emma F. A. Drake, Denver; Mrs. E. M. Whittemore, New York City; Dr. J. H. Kellogg, Battle Creek, Mich.; Dr. Mary Wood-Allen, Brooklyn; Miss Belle H. Mix, Danville, Ia.; Professor Newton N. Riddell, Chicago; Miss Hattie Dickson, Marshalltown, Ia.; Mrs. Lenora Lake, St. Louis; Mrs. Elizabeth Andrew, Oakland, Cal.; Dr. Howard A. Kelly, Baltimore; Mrs. V. A. Barnes, St. Louis; Rev. Dr. H. Pereira Mendes, New York City; Mrs. Julia Kurtz, Milwaukee, Wis.; J. T. Upchurch, Dallas, Tex.; Mrs. Nora E. R. Perkins, Milwaukee.

OFFICIAL ORGAN: *The Light,* published at La Crosse, Wis.

The object of this Federation shall be to unite in national co-operation all those forces in the United States that are striving to promote purity in the life of the individual, in social relations, and in family life by preventive, rescue, educational, reformatory, law enforcement, and legislative lines of effort.

DELEGATES

Delegates from churches, reform societies, labor unions, temperance organizations, social settlements, and all bodies promoting purity, will be welcome at this conference, as well as individuals who are interested in the cause which it is called to further. The Federation, while distinctly and thoroughly religious, is not connected with any sect and is independent of any political party, philosophical school, and religious confession. All will be welcome. Come!

REDUCED RAILROAD RATES

The Western Passenger Association, Central Passenger Association, and Southwestern Excursion Bureau have each granted a rate of a fare and one-third for the round trip from all points in their respective territory. It is fully expected that all passenger associations in the United States will concur in these low rates. Local ticket agents can give all necessary information after September 1. Delegates should observe that these rates will be on the regular certificate plan. When purchasing your ticket for Chicago, ask your ticket agent for *certificate* (not receipt) duly filled out. If you cannot buy through ticket, get certificate for each ticket purchased. When signed by joint agent, who will be present on Wednesday and Thursday, and for which he will charge twenty-five cents each, the certificate will enable you to buy return ticket for one-third regular fare, provided one hundred delegates holding certificates are present at the conference.

LOCAL ARRANGEMENTS AT CHICAGO

The local arrangements at Chicago are in charge of a very able committee, composed of the following: Rev. William Burgess, Chairman, 6822 South Park Avenue; Rev. Jenkin Lloyd Jones, Bishop Samuel T. Fallows, Rabbi Tobias Schanfarber, Mrs. J. B. Caldwell, Dr. David Paulson, Rev. Dr. John Balcom Shaw, Professor W. S. Jackman, and Rev. Joseph F. Flint.

This committee has already performed much work and promises as every provision for the comfort of delegates and the convenience of the conference.

PLACE OF HOLDING THE CONFERENCE

Rev. Jenkin Lloyd Jones and his people of All Souls' Church have very generously and kindly offered the Abraham Lincoln Center for our conference. The offer was promptly accepted by the Chicago committee. Lincoln Center is located at the corner of Oakwood Boulevard and Langley Avenue (between Thirty-eighth and Thirty-ninth Streets, near Cottage Grove Avenue), and is conveniently reached from all parts of the city by street cars. The auditorium of Lincoln Center will accommodate nearly one thousand people, and there are ample rooms for rest, sectional meetings, and committee work. The management will serve supper each evening of the conference for the convenience of delegates, at a price of only twenty-five cents. It is possible that lunches will also be served. There are very excellent hotels located within convenient distance of Lincoln Center. Very reasonable rates have been secured for delegates which will enable them to keep expenses down to a low figure.

THE PROGRAM

The chief interest in a gathering of this nature centers in the program, and we are fortunate this year in having assured the very best program ever given at a purity conference. Men and women from all sections of our country who have attained eminence in their chosen work will present thorough discussions covering every phase of the purity question.

Delegates should plan to arrive in Chicago as early as possible on Tuesday morning, October 9. At 10 o'clock there will be a meeting of the Executive Committee, and at 1:30 o'clock there will meet in different rooms at Lincoln Center, two sectional conferences. The one dealing with "Purity Instruction in Schools" is in charge of a committee with Mrs. Elizabeth B. Grannis as chairman, while Rev. Sidney C. Kendall is arranging the sectional meeting on the "White Slave Traffic." At 4 o'clock a joint meeting will be held, being the first meeting of the general conference, at which committees will be announced and the presi-

dent's address delivered. On Wednesday and Thursday three sessions will be held each day.

SPEAKERS

Space does not permit more than the mention of speakers thus far secured. A number not here given will appear on the program.

Rev. Wilbur F. Crafts, Ph.D., Washington, D. C.; Mr. Anthony Comstock, New York City; Mrs. Lenora Lake, St. Louis; Maria Lydia Winkler, Berlin, Germany; John B. Lennon, treasurer, American Federation of Labor; Miss Frances A. Kellor, New York City; Professor Newton N. Riddell, Chicago; Mary Church Terrell, Washington; Dr. J. H. Kellogg, Battle Creek; Rabbi Tobias Schanfarber, Chicago; Rev. Sylvanus Stall, D.D., Philadelphia; Rev. Father Coffey, St. Louis; Dr. Mary Wood-Allen, Brooklyn; Mrs. Rose Woodallen Chapman, Brooklyn; Theodore Schroeder, New York City; Ada Wallace Unruh, Portland, Ore.; Mrs. E. M. Whittemore, New York City; Delos F. Wilcox, Ph.D., Detroit; Mother Prindle, Boston; Miss Belle H. Mix, Danville, Ia.; Mr. J. B. Caldwell, Chicago; Mrs. Mary E. Teats, Los Angeles, Cal.; Mrs. Charlton Edholm Sibley, Tucson, Ariz.; Rev. Wiley J. Phillips, Los Angeles; Mrs. E. M. Adams, Mound City, Kan.; Dr. Hattie E. Schwendener, St. Joseph, Mich.; Dr. Emma F. A. Drake, Denver; Rev. Charles Mitchell, Guthrie, Okla.; Rev. George Rheinfrank, Le Mars, Ia.; Mrs. Sarah F. Bond, Oklahoma City; Rev. Albert Godley, Munice, Ind.; Mr. Richard R. Lee, Omaha.

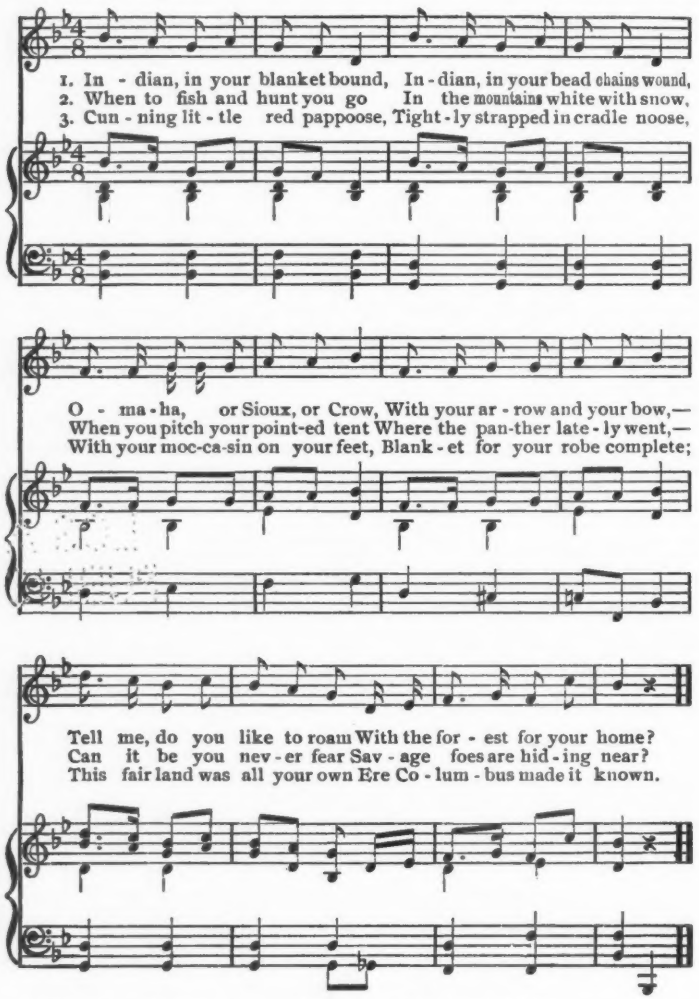
FURTHER INFORMATION

The complete program, including full information relative to railroad rates, hotels, sectional conferences, etc., will be ready for mailing by September 15. These will be sent free of cost in any quantity requested to all applicants. Address further inquiries to NATIONAL PURITY FEDERATION, B. S. Steadwell, President, La Crosse, Wis.

You are most cordially invited to attend the National Purity Conference. The conference will represent the true federation spirit, and no matter what phase of the purity movement, the greatest cause on earth, you are interested in, you will find here people who are devoting their lives to the prosecution of just that work and ample consideration given to same on the program. Urge other interested persons to come and organizations to send delegates. No one truly devoted to the cause of purity can afford to miss this conference. Come anticipating that our fellowship together shall accomplish much for our movement.

FOREIGN CHILDREN[1]

LYDIA AVERY COONLEY — JESSIE L. GAYNOR


1. In - dian, in your blanket bound, In - dian, in your bead chains wound,
2. When to fish and hunt you go In the mountains white with snow,
3. Cun - ning lit - tle red pappoose, Tight - ly strapped in cradle noose,
O - ma - ha, or Sioux, or Crow, With your ar - row and your bow,—
When you pitch your point-ed tent Where the pan-ther late - ly went,—
With your moc-ca-sin on your feet, Blank - et for your robe complete;
Tell me, do you like to roam With the for - est for your home?
Can it be you nev - er fear Sav - age foes are hid - ing near?
This fair land was all your own Ere Co - lum - bus made it known.

[1]From *Songs in Season*, by permission of A. Flanagan, publisher.

EDITORIAL NOTES

Somebody should write a *Primer of Evolution* for the especial use of school-teachers. Everybody *says* nowadays that he bases his work with the children upon the principles of evolution, but practice soon betrays that very few clearly or fully appreciate how much is implied in their adoption. Our educational practice rests mainly upon a curious and a confusing blend of evolutionary theory with ancient tradition. Bound up in the same teacher's mind we can often find the most audacious guesses concerning the possibilities of growth and a whole code of superstitious rites as a proposed means of realizing them—hence the imperative need of a Primer.

Wanted: A Primer

The first lesson of this Primer should impress the point that the present never represents anything but a group of conditions that is undergoing reorganization; conditions that are resolving themselves constantly into new relationships. Most teachers have gone no farther than dimly to realize that "the present is a transition stage"—meaning by this that it represents a set of conditions in flux *which connect one fixed state with another fixed state that is soon to follow.* But this is not evolution at all; it is a nugatory blend of two diametrically opposed ideas, and the product is practically worthless as a foundation principle for school-teaching. Under this false idea, the teacher is continually trying to bring a living, moving, growing, thing, the child, into a state of rest. Without fully realizing it, he has his ideals fixed on the stage of quiet which it is supposed will succeed the period of transition. Present unrest is only to be endured for the sake of the repose that is to come. The teacher deals with it as a temporary shifting thing preliminary to future stable realities. He recognizes the importance of present movement to the *growing* thing, but, after all, his interest is centered *in the thing grown up;* whereas, it is the fact

Chapter I

Evolution vs. Intermittent Transition

Mistaking the Permanent for the Transient

that a fully grown-up stage is never reached. Evolution never predicts that for even our descendants. Here is a blend of the modern ideas of evolution with the ancient heathen notion of a state of endless quietude. This is at the root of most of the spiritual conflicts between pupil and teacher. Let the Primer make this matter clear.

The second lesson of the Primer should bring out sharply the fact that evolution involves elimination and extinction as well as conservation and propagation; that it involves degeneration as well as progress. It is the most serious part of the teacher's business to determine the direction and the value of a tendency. This was not always so. In the past all human tendencies were bunched together and assumed to be bad. In those days the science of teaching was an organized and wholesale warfare against nature. After the complete subjugation of nature, education was, then, something to be supplied. Under such ideals teaching was a matter of "main strength." Under the newer ideals the value of education will be determined largely, so far as the teacher is concerned, by his power of discrimination; that is, upon his ability to decide which tendencies are fading and atavistic, and which are growing and prophetic; which should be ignored and discountenanced, and which should be recognized and cultivated. A study of tendencies is the critical thing in education. As child-study and psychology have shown, they have their natural periods of appearance and disappearance. If the teacher misjudges and cultivates the wrong one, or neglects the right one at the proper period, irreparable mischief is done. Most teachers, blindly applying the "Recapitulation Theory," make too much of many selfish tendencies in childhood that are as rudimentary, socially, as the vermiform appendix is physiologically. It is no part of education to encourage growth in one more than in the other. Such tendencies must be reckoned with, but it is ridiculous to treat them as a help instead of as a hindrance in human development.

Chapter II

The Importance of Tendencies

Illustrations are numerous; for example, take the question of

ambidexterity. Is the gradual shifting of function to one hand, usually the right, a sign of progress or of degeneration? How should the teacher deal with this tendency of the pupil to localize functions in one of two similarly constructed organs or members? That is, is the evident tendency of man to change from a bilaterally symmetrical animal to one that is unilateral, a tendency in the line of progress or of deterioration? Until we can settle this question, our teaching must be at random. The tendency to localize physical functions seems to be almost irresistible. In teaching how to ride the bicycle, most instructors were careful to train their pupils to dismount on either side. Yet, once "out of school," not one rider in a hundred, perhaps, continued to dismount indifferently on the two sides—one or the other being permanently chosen. In mounting a horse, one always does so from the left side—though, but for the tendency toward unilateralism, there is no reason why either side should have the preference. There are many skilful horsemen who would even find it almost, if not quite, impossible to mount from the "off side." The milking of a cow from the right side is another concession in the same direction. This has gone so far as to create a kind of corresponding habit in the bilateral cow herself, as there are few of them, indeed, that will not kick—literally kick—if the milker in absent-mindedness tries to perform the operation from the "wrong side."

Significance of Biological Specialization

Now here is a biological tendency—what is its meaning? Is it backward or forward? On the one side, the gist of the argument is that, if we can do well with one hand, we should be twice as well off if the other hand were equally proficient—which may be a statement of fact, but it is certainly not proof. On the other side, it is claimed that the localization of function in one place rather than in two results in a refinement of work that would not otherwise be possible. This, also, is an assertion, but not proof. In the meantime our teaching will be guesswork—each according to his own guess.

The study of tendencies is not less interesting in other than

strictly biological fields. At present we are trying to conduct the school according to the ideals required by the theory of social development. But there is in every school a tendency—now much in favor, too—that is diametrically opposed to those ideals. This is the tendency toward so-called specialization in studies and in teaching. The specialist—the type most commonly met—is one who turns his back upon the social theory. He sets himself off as one apart, hyena-like, to enjoy his bone alone. We cannot imagine a "social" body composed of different specialists. They could only form an aggregation. If one were to lock up in the same room, for example, a specialist in some department of chemistry with a specialist in some department of language, there would be but little chance for social organization, unless both were to forsake their specialties. By mutual consent—thus implying a social instinct—they would have to unite upon some common topic—say, the weather. But then they would be specialists no longer! They would be compelled to discuss a topic that neither knew much about, or else be doomed to a gloomy solitude. Here is a tendency, the value of which, as a means of education, should be carefully determined. In the social field there have been some examples which will throw light upon the subject. While in the biological world no strictly unilateral or bilateral prodigy has been produced, in the social domain it is different. Here nature is not always uncertain or atavistic. At times in chance creations of mind she is clearly prophetic.

Significance of Social Tendencies

Specialists as Social Types

A generation or two ago the world was interested in the musical wonder known as "Blind Tom." In the direction of music Blind Tom seemed to have reached the limit of development. Into him, nature appeared to crowd the result of a thousand ages of musical education. Thru him, we were permitted to look into the distant future and catch a glimpse of what specialization in music may do. But Blind Tom was the extreme limit also of the anti-social type. He was absolutely senseless toward every social influence. From the social standpoint in him, degeneracy had reached the bottom; from that of the specialist he represented the climax—that pitch of perfection

Blind Tom

where all that we now call learning, knowledge and wisdom, in music, had become practically an unconscious instinct. For him, in the field of music, there was no more learning—no more knowledge.

Leonardo Da Vinci

We have examples of the opposite kind, too. Take Leonardo da Vinci; a mechanic, an engineer, an inventor, an artist, and a scientist; a scientist, in the dark ages, asking questions upon which no twentieth-century scientist can improve. He was a man not only great in almost every field of human endeavor; he possessed an open-mindedness that far outran his day—that far outruns our own time. He was in no sense a specialist. Were he to come to life now, it would seem as though he should fall in at once with any and all of our many activities and immediately lead the way into new fields. He stands high as an ideal social type. There is no phase of society where the Da Vinci quality of life is not made welcome and which it does not adorn.

Variety of Inherited Interests

The human being when born is open to a wonderful variety of interests. For a brief period he is left in a measure unfettered, and he acquires skill, knowledge, and a breadth of interest to a marvelous extent. The school then takes hold, and with its dogma that "a few things well learned are better than a little of many things," it begins the cramping, narrowing process, until in some cases it actually creates in the man a kind of pride in his ignorance concerning most things on the earth. It is as tho he used his vast ignorance of many things to represent obversely the depth and intensity of his knowledge of a few.

A False Scent

Now, if the present does foreshadow the future, and if the social ideal is the thing to be developed, we must draw the line somewhere on the specialist. If we want to develop the social type, we must treat with greater consideration and intelligence that love for breadth of knowledge that is the instinct of every child. The plea of the specialist is that, since one cannot know all or very much about everything, the general quest should be abandoned and he should try to know a great deal about a few things. But in the growth of the social type as a product of evolution, it is not the *amount of knowledge*

either of many things or of one thing that is important. It is that hospitality toward all things and interest in them which makes social organization possible. Nobody can transmit his knowledge to posterity any more than he can his money. But his quality of character, his attitude toward all things, including his fellows, whether it be narrow, self-centered, and solitary, or whether it be liberal, sympathetic, and social—it is this quality of character that seems to go onward through the generations. Herein lies the real significance of the teaching of psychology, that the period of childhood and youth should be prolonged to the latest moment: not merely that the child may be kept in short clothes, may play with dolls, and may be fed with a spoon, but, rather, that the inborn and inherited breadth of interest may have the chance of unhampered growth as long as possible. This is important because *it is in his early years that the human being most clearly foreshadows the real social type of the far-distant future.* As instinctive and untrained children, we are truly social; as educated adults, we degenerate and become merely gregarious.

Only Quality of Character Transmittible

The Child the Social Type

There is dire need for a reformation of specialists and of specialization. The universities must stop sending into the high school and elementary school their graduates as specialists who have no knowledge of the tendencies that sway childhood and youth, and consequently no appreciation of their tremendous significance. For an obvious reason, the kind of specialization now permitted in the universities leads the majority of teachers so prepared to begin with children just where they themselves left off in their postgraduate work. Such teachers bring into the schoolroom all the formulas of true scientific instruction, but these in their hands are as meaningless and ineffectual with childhood and youth as would be the rites and ceremonies of the sun-worshipers. It is another instance of a confusing blend of modern scientific method with the antiquated theory that early tendencies must be overcome, or, at least, may be ignored.

Reform Needed

Here, then, are three chapters for our *Primer of Evolution.*

W. S. J.

BOOK REVIEWS

Agriculture for Beginners. By CHARLES WILLIAM BUNKETT, Professor of Agriculture, and FRANK LINCOLN STEVENS, Professor of Biology, and DANIEL HARVEY HILL, Professor of English in the North Carolina College of Agriculture and Mechanic Arts. Boston, New York, Chicago; London: Ginn & Co. Pp. xii+339. 12mo, cloth.

This is the best book on the subject for school children that has come to my notice. In their work the authors have happily combined nature-study of the "impersonal" or general kind with that of a utilitarian or economic type in an interesting and useful way. The headings of the chapters show the order of treatment and also the scope of the work. They are as follows: I, "The Soil;" II, "The Soil and The Plant;" III, "The Plant;" IV, "How to Raise a Fruit Tree;" V, "The Diseases of Plants;" VI, "Orchard, Garden, and Field Insects;" VII, "Farm Crops;" VIII, "Domestic Animals;" IX, "Farm Dairying;" X, "Miscellaneous—Foodstuffs, Tools, Birds, and Life in the Country;" XI, "Supplement on Horticulture, Market Gardening, etc."

The book should be a text in every county, village, and city school where there are opportunities for observing farm work or for participating in gardening either at home or at school. It presents farming and gardening as fascinating studies, and no pupil can follow its pages without developing a genuine respect for these greatest of human industries, as well as a wide knowledge concerning them. The illustrations, of which there are many, are well chosen and excellently executed.

The book is not merely a "reader;" it contains many suggestions for both teacher and pupil which, if heeded, will furnish a continuous line of work in observation outdoors and experimentation indoors. It is a good beginning for both pure and practical science.

WILBUR S. JACKMAN

BOOKS RECEIVED

AMERICAN BOOK COMPANY, NEW YORK AND CHICAGO

Wilhelm Tell, Schiller. E. C. Roedder, Editor. Cloth, 12mo. Pp. 352. $0.70.

The Golden Fleece. By James Baldwin. Cloth, 12mo. Pp. 288. $0.50.

Hernani, Hugo. James D. Brunner, Editor. Cloth, 12mo. Pp. 264. $0.70.

Progressive Arithmetic. First, Second, and Third Books. By William J. Milne, Ph.D., LL.D., President of State Normal School, Albany, N. Y.

Am Sonnenschein, Storm. By Z. L. Swiggett. Cloth, 12mo, Pp. 78. $0.25.

Little Stories of France. By Maude Burrows Dutton. Cloth, 12mo. Pp. 176. $0.40.

THE MACMILLAN CO., NEW YORK

Macmillan's Pocket American and English Classics. Cloth, 16mo. $0.25.

King Henry V, Washington's Farewell Address, Passages from The Bible, Dicken's Christmas Carol, Church's Story of the Odyssey, Carlyle's Heroes and Hero Worship, Emerson's Essays, Bacon's Essays, Miles Standish, Homer's Iliad, Church's Story of The Iliad, Hawthorne's Wonder Book, Carroll's Alice's Adventures, Longfellow's Tales of a Wayside Inn.

How We Are Sheltered: A Geographical Reader. By James F. Chamberlain, Ed.B., S.B. Cloth, 12mo. Pp. 184.

History of The English Language. By Oliver Farrar Emerson, A.M., Ph.D. Cloth, 12mo. Pp. 415.

SILVER, BURDETT & CO., NEW YORK AND CHICAGO

Essentials of United States History. By William Q. Mowry and Blanche S. Mowry. Cloth, 12mo. Pp. xv+434. $0.90.

The World and Its People: Book VII. Views in Africa. By Anna B. Badlam. Cloth, 12mo. Pp. 443.

The School and Its Life. By Charles B. Gilbert. Cloth, 12mo. Pp. 266. $1.25.

B. F. JOHNSON PUBLISHING CO., ATLANTA

Playmates: A Primer. By M. W. Haliburton. Cloth, 12mo. Pp. 96.

Our Language: Second Book. By C. Alphonso Smith, Ph.D. Cloth, 12mo. Pp. 240.

MAYNARD MERRILL & CO., NEW YORK

Graded Poetry Readers, Nos. 1, 2, 3, and 4. Edited by Katherine D. Blake and Georgia Alexander.

THE WHITAKER & RAY CO., SAN FRANCISCO

Lessons in Nature Study. By Oliver P. Jenkins and Vernon L. Kellogg. Cloth, 12mo. Pp. 191.

CHARLES SCRIBNER'S SONS, NEW YORK

Occupations for Little Fingers. By Elizabeth Sage and Anna M. Cooley. Introductory Note by Mary Schenk Woolman. Cloth, 12mo. Pp. 154.

PARKER P. SUMMERS, NEW YORK

An Algebra for Grammar Schools. By Charles A. Hobbs, A.M. Cloth, 12mo. Pp. 138.